Miedema, Ron

From: Mier, Jena <Jena.Mier@nexteraenergy.com>
Sent: Friday, April 01, 2016 10:21 AM
To: Miedema, Ron
Cc: Able, Tony
Subject: RE: Turkey Point Site Visit.

You are welcome. Have fun out there!☺

Jena S. Mier, PWS
Project Manager
Environmental Services

NEXTera ENERGY

700 Universe Blvd.
Juno Beach, FL 33408
Office 561-691-2209
Cell 561-339-0621
Jena.Mier@nee.com

From: Miedema, Ron [mailto:Miedema.Ron@epa.gov]
Sent: Friday, April 01, 2016 10:21 AM
To: Mier, Jena
Cc: Able, Tony
Subject: Re: Turkey Point Site Visit.

Thank You Jena,

We will meet them at 8:00 on the 12th. I will make it perfectly clear, this site visit is only to review and discuss the Turkey Point 6 and 7 project.

Thanks again for arranging this,

Ron

From: Mier, Jena <Jena.Mier@nexteraenergy.com>
Sent: Friday, April 1, 2016 10:09 AM
To: Miedema, Ron
Subject: RE: Turkey Point Site Visit.

Ron-

Ken Proctor and Karl Bullock will be your escorts for the day. Unfortunately, I am unable to attend but have been working with them to set everything up. I suggest you meet at the Day Care like we did last time at 8:00 am so that you

will have sufficient time to see what you are interested in seeing. Karl will be guiding since he was with us last time. No problem with including Bill Cox as long as it is clear the site visit is specific to the Turkey Point 6 & 7 project.

Jena S. Mier, PWS
Project Manager
Environmental Services

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Juno Beach, FL 33408
Office 561-691-2209
Cell 561-339-0621
Jena.Mier@nee.com

From: Miedema, Ron [mailto:Miedema.Ron@epa.gov]
Sent: Wednesday, March 30, 2016 10:08 AM
To: Mier, Jena
Subject: Turkey Point Site Visit.

Good morning Jena,

For our site visit April 12, I would like to start as soon as possible as we will be in Homestead the night before. I would like to show Tony the same thing you showed me the last time.

If I recall we reviewed Onsite impacts, Transmission line corridors, Road Widening, and Mitigation. Pipelines??

Anyway. Bill Cox, who used to be my EPA Branch Chief but is now temporarily assigned to Biscayne National Park would like to join us if there is room. Your call just let me know

Thanks, and I'll see you soon.

Ron

Miedema, Ron

From: Jocelyn Karazsia - NOAA Federal <jocelyn.karazsia@noaa.gov>
Sent: Friday, April 15, 2016 11:59 AM
To: Kay Davy - NOAA Federal
Cc: Miedema, Ron
Subject: Re: Turkey Point
Attachments: FPL-TurkeyPointUnits6and7_2009-02417_EFH_FINAL (2).pdf

Hi Kay,

Sorry for the delayed response. I have not been to the site in a while, however I spoke with Ron yesterday and learned he did a site visit recently. You may want to reach out to him. On page 3 of our EFH letter, we address the mangrove impacts. I am not familiar with FLUCS codes, so I am not sure what swamp vs head classification would have any relevance for intertidal zonation.

Jocelyn

On Mon, Apr 11, 2016 at 3:34 PM, Kay Davy - NOAA Federal <kay.davy@noaa.gov> wrote:

Hi Jocelyn,

Have you been to the Turkey Point site? (I haven't) I had questioned the NRC about the impacts to mangroves that could be juvenile smalltooth sawfish habitat. They claim the mangroves do not offer intertidal habitat. Rachel was thinking maybe someone from the Corps in Kendall could do a little site visit. I thought I'd check with you first to see if you have first-hand experience of the site.

Thanks,
Kay

--
Kay Davy
Protected Resources Division
National Marine Fisheries Service
National Oceanic and Atmospheric Administration (NOAA)
Office: 727-415-9271

--
Jocelyn Karazsia
Fishery Biologist
NOAA National Marine Fisheries Service
Southeast Region, Habitat Conservation Division

Miedema, Ron

From: Kay Davy - NOAA Federal <kay.davy@noaa.gov>
Sent: Monday, April 18, 2016 8:55 AM
To: Miedema, Ron
Cc: Jocelyn Karazsia - NOAA Federal
Subject: Re: Turkey Point

Thanks, Ron! I appreciate the good info. NRC has really been in denial about impacts, so I'm glad you've seen it first-hand.

Have a good day

Kay

On Mon, Apr 18, 2016 at 6:51 AM, Miedema, Ron <Miedema.Ron@epa.gov> wrote:

Kay,

The only impact I see to tidal mangroves may come from adding a new power line to the eastern transmission line corridor. We have been instructed by FPL that there is enough room on the existing pads to add another pole to accommodate this one new line. In reviewing the access road, pads, and surrounding mangroves, it is hard for me to believe there will not be temporary impacts to some mangroves during this construction.

Hope this helps,

Ron

From: Kay Davy - NOAA Federal [mailto:kay.davy@noaa.gov]
Sent: Friday, April 15, 2016 4:40 PM
To: Jocelyn Karazsia - NOAA Federal <jocelyn.karazsia@noaa.gov>
Cc: Miedema, Ron <Miedema.Ron@epa.gov>
Subject: Re: Turkey Point

Thanks, Jocelyn!

Hi Ron,

Jocelyn said you were on-site recently. Did you see any tidal mangroves that would be impacted? We are trying to determine if the shallow water intertidal habitat of juvenile smalltooth sawfish would be impacted by the Turkey Point expansion. Any comments would be appreciated.

I hope you both have a good weekend!

Kay

On Fri, Apr 15, 2016 at 11:59 AM, Jocelyn Karazsia - NOAA Federal <jocelyn.karazsia@noaa.gov> wrote:

Hi Kay,

Sorry for the delayed response. I have not been to the site in a while, however I spoke with Ron yesterday and learned he did a site visit recently. You may want to reach out to him. On page 3 of our EFH letter, we address the mangrove impacts. I am not familiar with FLUCS codes, so I am not sure what swamp vs head classification would have any relevance for intertidal zonation.

Jocelyn

On Mon, Apr 11, 2016 at 3:34 PM, Kay Davy - NOAA Federal <kay.davy@noaa.gov> wrote:

Hi Jocelyn,

Have you been to the Turkey Point site? (I haven't) I had questioned the NRC about the impacts to mangroves that could be juvenile smalltooth sawfish habitat. They claim the mangroves do not offer intertidal habitat. Rachel was thinking maybe someone from the Corps in Kendall could do a little site visit. I thought I'd check with you first to see if you have first-hand experience of the site.

Thanks,

Kay

--

Kay Davy

Protected Resources Division

National Marine Fisheries Service

National Oceanic and Atmospheric Administration (NOAA)

Office: 727-415-9271

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Jocelyn Karazsia
Fishery Biologist
NOAA National Marine Fisheries Service
Southeast Region, Habitat Conservation Division

--

Kay Davy

Protected Resources Division

National Marine Fisheries Service

National Oceanic and Atmospheric Administration (NOAA)

Office: 727-415-9271

--

Kay Davy

Protected Resources Division
Northeast Marine Fisheries Service
National Oceanic and Atmospheric Administration (NOAA)
Office: 727-415-9271

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAY - 4 2015

Colonel Alan M. Dodd
District Engineer
Department of the Army
Jacksonville District Corps of Engineers
Attn: Megan Clouser
9900 Southwest 107th Avenue, Suite 203
Miami, Florida 33176

Subject: Florida Power and Light Company: 2009-02417(SP-MLC)

Dear Colonel Dodd:

This letter is in response to permit application number 2009-02417(SP-MLC) submitted by the Florida Power and Light Company (FPL). The applicant proposes to impact 1000 acres of tidal and freshwater wetlands for the purpose of constructing two new 1,100 megawatt nuclear generating units (Units 6 & 7) at the existing Turkey Point facility. Other components of the project consist of: (1) east and west transmission line routes; (2) road expansion; (3) construction of a reclaimed water facility, four radial collector wells and twelve deep-injection wells; (4) installation of reclaimed and potable water pipelines; and (5) the expansion of an existing boat basin. The proposed project will impact waters of the United States, including wetlands which consist of a mangrove swamp, sawgrass marsh, mixed wetland hardwoods, seagrass, freshwater and saltwater marsh, and wetland shrub. The Turkey Point facility is located at the eastern terminus of Palm Drive, adjacent to Biscayne Bay, in Sections 33 and 34, Township 57 South, Range 40 East, Miami-Dade County, Florida.

The proposed project will have a direct impact on approximately 300 acres of high quality, tidal mangrove wetlands. Tidal mangrove wetlands located within south Florida such as those proposed for impact, form a vital component of the estuarine and marine environment, provide a major organic detrital base to the aquatic food chains, include significant habitat for arboreal, intertidal and subtidal organisms, nesting sites, cover and foraging grounds for birds, and habitat for reptiles and mammals. Mangrove systems provide protected nursery areas for fishes, crustaceans, and shellfish and are one of the most biologically productive ecosystems in the world. Mangroves also serve as storm buffers by functioning as wind breaks and through prop root baffle wave action. Mangrove roots stabilize shorelines and fine substrates, reducing turbidity, and enhancing water clarity. Mangroves improve water quality and clarity by filtering upland runoff and trapping waterborne sediments and debris. The cumulative loss of this habitat has reduced overall water quality and fisheries production within the south Florida ecosystem. For all of the aforementioned reasons, the Environmental Protection Agency considers these mangrove wetlands to be Aquatic Resource of National Importance (ARNI).

In addition, the proposed project would impact approximately 40 acres of sawgrass marshes which provide principal environmental values related to water quality and quantity. They serve as filter systems for water and protect natural bodies of water from eutrophication. Numerous birds can be found in this community year-round or for over-wintering. They also provide habitat for frogs, snails, and crayfish, which serve as food sources for larger protected animals that are found in this region. Protected animals that can be found in and around sawgrass marsh systems include the Everglades mink (*Mustela vison evergladensis*), Florida panther (*Felis concolor coryi*), snail kite (*Rostrhamus sociabilis*), wood stork (*Mycteria americana*), and American alligator (*Alligator mississippiensis*). Therefore, the EPA considers sawgrass marshes to be ARNI.

The proposed project would also impact approximately 1 acre of submerged aquatic vegetation (SAV), which includes *Ruppia maritima, Thalassia testudinum* and *Halodule wrightii*. Fin and shell fish commonly associated with this species include Florida crawfish, stone crab, blue crab, penaeid shrimp, sea trout, gray snapper, red drum, pinfish, mullet and flounder. Moreover, SAV provides attachment sites for periphyton which in turn increases food value for the base of marine and estuarine food webs. SAV aids in stabilizing the shallow water submerged land which promotes water quality. SAV also performs important nutrient uptake functions which assist in the maintenance of water quality. For these reasons, the EPA also considers SAV to be ARNI.

In our letter dated April 9, 2015, the EPA requested that the applicant provide information on measures that are planned to avoid and minimize onsite, 1000 acres of freshwater and tidal wetland impacts. The EPA can consider compensatory mitigation to these wetlands only after the applicant provides information which clearly demonstrates avoidance and minimization requirements have been satisfied. The EPA also requested a benthic survey of the project, contingency plans regarding water use, effects sea level rise will have on the project, cumulative impact analysis, and mitigation plans. To date, we have not received a response to our letter of April 9, 2015.

The Guidelines, at 40 CFR §230.10(b), prohibit discharges that will result in a violation of the applicable water quality standards or toxic effluent standards, jeopardize a threatened or endangered species, or violate requirements imposed to protect a marine sanctuary. At this point, the state has not issued its Section 401 certification for this project. As a result the EPA cannot identify water quality concerns that remain and reserves its right to comment as necessary once the Section 401 certification is issued. Further, as stated in the public notice, the Nuclear Regulatory Commission is the lead federal agency and responsible for consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service pursuant to Section 7 of the Endangered Species Act (ESA). To the best of our knowledge, neither the ESA consultation nor the Section 401 certification processes have been completed as of the date of this letter.

In conclusion, the EPA believes that the permit for the project is not approvable as proposed, because it does not comply with the Clean Water Act (CWA) Section 404(b)(1) Guidelines. We believe that the proposed project may cause permanent degradation of mangroves, sawgrass, and SAV, which the EPA considers to be ARNI. Therefore, because the EPA has not been provided sufficient additional information to allow us to determine that the proposed project complies with the CWA Section 404(b)(1) Guidelines, we must conclude that it does not, and we therefore believe that a permit for the project is not approvable, as proposed. In addition, the state has not issued its Section 401 certification and consultation with the FWS has not been completed. The EPA reserves its authority to further comment once those processes are completed. This letter follows the procedures outlined in the 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, Elevation of Individual Permits, paragraph 3(b), regarding Section 404(q) of the CWA.

Thank you for providing an opportunity for the EPA to comment on this authorization. At this time, the EPA requests additional information to facilitate our evaluation of this project. We look forward to receiving more information from you. If you have any questions, please feel free to contact me, or have someone from your staff contact my technical staff person, Ron Miedema at 400 North Congress Avenue, Suite 120, West Palm Beach, Florida 33401, or by telephone at 561-616-8741.

Sincerely,

Heather McTeer Toney
Regional Administrator

cc: Ms. Victoria Foster, Fish and Wildlife Service
Ms. Jocelyn Karazsia, National Marine Fisheries Service
Ms. Jennifer Smith, Florida Department of Environmental Protection

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
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APR 09 2015

Colonel Alan M. Dodd
District Engineer
Department of the Army
Jacksonville District Corps of Engineers
Attn: Megan Clouser
9900 Southwest 107th Avenue, Suite 203
Miami, Florida 33176

Subject: Florida Power and Light Company; 2009-02417(SP-MLC)

Dear Colonel Dodd:

This letter is in response to permit application number 2009-02417(SP-MLC) submitted by Florida Power and Light Company (FPL). The applicant proposes to impact 1000 acres of tidal and freshwater wetlands for the purpose of constructing two new 1,100 megawatt nuclear generating units (Units 6 & 7) at the existing Turkey Point facility. Other components of the project consist of: (1) east and west transmission line routes; (2) road expansion; (3) construction of a reclaimed water facility, four radial collector wells and twelve deep-injection wells; (4) installation of reclaimed and potable water pipelines; (5) and the expansion of an existing boat basin. The wetlands proposed for impact consist of mangrove swamp, sawgrass marsh, mixed wetland hardwoods, seagrass, freshwater and saltwater marsh, and wetland shrub. However, the public notice (PN) did not provide a detailed breakdown of wetland impacts by community type. The Turkey Point facility is located at the eastern terminus of Palm Drive, adjacent to Biscayne Bay, in Sections 33 and 34, Township 57 South, Range 40 East, Miami-Dade County, Florida.

The U.S. Environmental Protection Agency Region 4 has completed its review of this project from information contained in the PN and the Draft Environmental Impact Statement (DEIS) for Turkey Point Nuclear Units 6 and 7. This letter summarizes the EPA's position on the project based on the Clean Water Act (CWA) Section 404(b)(1) Guidelines, which prohibit avoidable or significant adverse impacts to the aquatic environment.

The proposed project will have a direct impact on approximately 300 acres of high quality, tidal mangrove wetlands. Mangrove wetlands located within south Florida form a vital component of the estuarine and marine environment, providing a major organic detrital base to the aquatic food chains, significant habitat for arboreal, intertidal and subtidal organisms, nesting sites, cover and foraging grounds for birds, and habitat for reptiles and mammals. Mangroves provide protected nursery areas for fishes, crustaceans, and shellfish. Mangrove systems are one of the most biologically productive ecosystems in the world. Mangroves also serve as storm buffers by functioning as wind breaks and through prop root baffling of wave action. Mangrove roots stabilize shorelines and fine substrates, reducing turbidity, and enhancing water clarity. Mangroves improve water quality and clarity by

filtering upland runoff and trapping waterborne sediments and debris. However, the cumulative loss of this habitat has reduced overall water quality and fisheries production within the south Florida ecosystem. For these reasons, the EPA considers these mangrove wetlands to be aquatic resources of national importance (ARNI).

In addition, the proposed project would impact approximately 40 acres of sawgrass marshes which provide principal environmental values related to water quality and quantity. They serve as filter systems for water and protect natural bodies of water from eutrophication. Numerous birds can be found in this community year-round or for over-wintering. They also provide habitat for frogs, snails, and crayfish, which serve as food sources for larger protected animals that are found in this region. Protected animals that can be found in and around sawgrass marsh systems include the Everglades mink (*Mustela vison evergladensis*), Florida panther (*Felis concolor coryi*), snail kite (*Rostrhamus sociabilis*), wood stork (*Mycteria americana*), and American alligator (*Alligator mississippiensis*). Therefore, the EPA considers sawgrass marshes to be ARNI.

Lastly, the proposed project would impact approximately one acre of submerged aquatic vegetation (SAV), which includes *Ruppia maritima, Thalassia testudinum,* and *Halodule wrightii.* Fin and shell fish commonly associated with this species include Florida crawfish, stone crab, blue crab, penaeid shrimp, sea trout, gray snapper, red drum, pinfish, mullet, and flounder. Moreover, SAV provides attachment sites for periphyton which in turn increases food value for the base of marine and estuarine food webs. SAV aids in stabilizing the shallow water submerged land which promotes water quality. SAV also performs important nutrient uptake functions which assist in the maintenance of water quality. For these reasons, the EPA also considers SAV to be ARNI.

The EPA requests that the applicant provide information on measures that have been taken to avoid and minimize onsite, freshwater and tidal wetland impacts. The project as proposed will impact 1000 acres of tidal and freshwater wetlands which include ARNI. According to the CWA Section 404(b)(1) Guidelines, 40 CFR § 230.91(c), and the February 6, 1990, Memorandum of Agreement between the U.S. Army Corps of Engineers and the EPA regarding the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines, an applicant must demonstrate avoidance and minimization of wetland impacts before compensatory mitigation can be considered. The CWA Section 404(b)(1) Guidelines, 40 CFR Subpart H, describes several (but not all) means of minimizing impacts of an activity. The EPA recommends that the applicant consider installing the reclaimed and potable waterlines at deep enough elevations which would allow herbaceous wetlands to remain at the surface. In addition, we recommend that all lay down areas used during construction be restored to their natural wetland community type.

In order to evaluate the proposed project, the EPA requests that the applicant provide a colored copy benthic survey of the boat basin, radial collector well locations, and the Unit 6 & 7 site. The benthic survey should extend a radius of 50 feet around submerged lands of these locations. The benthic survey should include a description of the protocol used to complete the survey, sampling dates, and a map that illustrates the density and location of each SAV found at the site. The benthic survey submitted for review should be conducted between the months of June and September to ensure the survey is conducted during the active growing season. The benthic survey is necessary for the EPA to determine the extent of SAV impacts that will occur due to the proposed project.

The new nuclear reactor Units 6 and 7, including cooling towers, makeup water reservoir, new

substation and associated facilities, would be built on a filled "218 acre island" enclosed by a stabilized earth wall to the north, east, and west. A reinforced concrete wall would be constructed to the south. The elevation within the fill island would range from 19 feet to 26 feet North American Vertical Datum of 1988. With the threat of sea level rise in the foreseeable future, the EPA has concerns about what effect this may have on the surrounding infrastructure to this created island. Please provide information which would support construction of the project considering the fact that even though the power units will be constructed on this island, the surrounding landscape may be impacted by sea level rise or storm surges that may affect the feasibility of the project given the project purpose.

The proposed project includes construction of a nine mile pipeline from the Miami-Dade County South Waste Water Treatment Plant to the newly constructed wastewater treatment facility at the Turkey Point facility. The purpose of the waste pipeline is to supply reclaimed water for use in the wet-cooling system for Units 6 & 7. When reclaimed water is not available in sufficient quantity or quality for the wet-cooling system, makeup water would be provided by four radial collector wells installed in Biscayne Bay. Under the Florida Department of Environmental Protection final condition of certification, the radial collector wells may only be used for 60 days per year. It is not clear what contingency plan will be implemented should the 60 day limitation be exhausted and the reclaimed water supply is not available. Please provide a detailed explanation of the contingency plans.

The PN states that the applicant proposes to offset project impacts by conducting permittee responsible mitigation and purchasing credits at the FPL Everglades Mitigation Bank and Hole-in the-Donut in-lieu-fee program. The EPA preference for mitigation is the use of a federally approved mitigation bank or in-lieu fee program, if available, rather than permittee-responsible mitigation. Since avoidance and minimization have not been adequately demonstrated, it is premature for the EPA to consider any type of mitigation plan. In the event that onsite wetland impacts are reduced and avoidance and minimization are demonstrated in the future, the EPA requests that the applicant provide the following information regarding any proposed mitigation. This information is necessary in order to ensure the proposed mitigation for impacts associated with the project are in compliance with the Federal Compensatory Mitigation Rule, dated April 2008.

- Detailed mitigation and maintenance plan
- The responsible party for the long-term management of the mitigation area
- Assurance for the long-term protection of the mitigation area (such as a perpetual conservation easement)
- Detailed performance standards to achieve mitigation success
- Detailed monitoring requirements
- Detailed long-term management plan
- Detailed adaptive management plan
- Documented financial assurance to ensure the mitigation site is maintained in perpetuity
- Detailed description of the net benefit the proposed mitigation will provide to the environment
- Objectives
- Site selection criteria
- Baseline information
- Credit determination methodology

The EPA requests that the applicant provide Uniform Mitigation Assessment Method scores for the proposed impact and mitigation sites. Technical rationale for each score should also be included.

The EPA requests that the applicant provide a cumulative impact analysis for other commercial projects that have proposed tidal and freshwater wetland impacts in Miami-Dade County, Florida. It is essential that we have a clear understanding of the potential direct, secondary, and cumulative environmental impacts these projects will have on aquatic resources. This should include all mangrove, sawgrass marsh and SAV parcels located in Miami-Dade County, Florida.

In conclusion, the EPA believes that the permit for the project should not be approved as currently proposed, because it does not comply with the CWA Section 404(b)(1) Guidelines. We believe that the proposed project may result in substantial and unacceptable impacts to mangrove wetlands, sawgrass marshes and SAV, which we consider to be ARNI. This letter follows the field level procedures outlined in the August1992 404(q) Memorandum of Agreement between the EPA and the Department of the Army, Part IV, Paragraph 3(a).

Thank you for providing an opportunity for the EPA to comment on this authorization. At this time, the EPA requests additional information to facilitate our evaluation of this project. We look forward to receiving more information from you. If you have any questions, please contact Ron Miedema at 400 North Congress Avenue, Suite 120, West Palm Beach, Florida 33401, or by telephone at 561-616-8741.

Sincerely,

James D. Giattina
Director
Water Protection Division

cc: Ms. Victoria Foster, FWS, Vero Beach, Florida
Ms. Barbara Conmy, SFWMD, West Palm Beach, Florida
Ms. Jocelyn Karazsia, NMFS, West Palm Beach, Florida

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

May 22, 2015 F/SER47:JK/pw

(Sent via electronic mail)

Colonel Alan Dodd, Commander
U.S. Army Corps of Engineers, Jacksonville District
Miami Permits Section
9900 Southwest 107th Avenue, Suite 203
Miami, Florida 33176

Jennifer Dixon-Herrity, Chief
U.S. Nuclear Regulatory Commission
Division of New Nuclear Reactor Licensing
Mail Stop: TWFN 6C32
Washington, D.C. 20555-001

Attention: Megan Clouser and Alicia Williamson

Dear Colonel Dodd and Ms. Dixon-Herrity:

NOAA's National Marine Fisheries Service (NMFS) reviewed public notice SAJ-2009-02417 (SP-MLC) dated March 13, 2015, from the U.S. Army Corps of Engineers Jacksonville District (USACE) and the draft *Environmental Impact Statement for the Combined Licenses (COLs) for Turkey Point Units 6 and 7* (EIS), dated February 2015, prepared by the Nuclear Regulatory Commission (NRC). Both documents describe plans by the Florida Power and Light Company (FPL) to build and operate two new 1,100-megawatt nuclear generating units referred to as Units 6 and 7 at the Turkey Point Nuclear Plant adjacent to Biscayne Bay in Miami-Dade County. In addition to the public notice and draft EIS, the NRC prepared an essential fish habitat (EFH) assessment and provided it to the NMFS by letter dated February 25, 2015. The project components most germane to the EFH consultation are the filling of 1,000 acres of wetlands for construction of the nuclear units and related infrastructure and establishing four radial collector wells (RCW) that would withdraw 43,200 gallons of water per minute (gpm) from the Biscayne Bay aquifer for 60 days per year under normal operating conditions. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the following comments and recommendations are provided pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Essential Fish Habitat Consultation

The public notice and draft EIS identify the NRC as the lead federal agency for consultation conducted pursuant to the EFH provisions of the Magnuson-Stevens Act. By letter dated August 5, 2010, the NMFS reviewed for the NRC the content required of an EFH assessment under 50 CFR 600.920(e)(3) and (4). Overall, the NRC provided an initial determination that construction and operation of the RCWs, 105 acres of mangrove impact, and 0.10 acres of seagrass impact, located within or adjacent to the Biscayne Bay Aquatic Preserve and designated Habitat Areas of Particular Concern (HAPCs) by the South Atlantic Fishery Management Council, would not result in an adverse impact on EFH or federally managed fishery species. The NRC provides individual determinations on the effects of six actions or activities on mangrove, seagrass, and unconsolidated bottom habitats in the EFH assessment (Table 1). As described

further below, the NMFS disagrees with these determinations and concludes the proposed dredging and operation of the RCWs would result in adverse impacts to seagrass or mangroves. In particular, the RCW operation could alter nearshore water quality resulting in hypersalinity and hyperthermal conditions impacting additional seagrass and fishery resources in the Biscayne Bay Aquatic Preserve. Due to the potential severity of these impacts, a biological monitoring and adaptive management plan is recommended to evaluate the predicted impacts of RCW operation relative to the actual impacts and to implement corrective actions or mitigation measures if environmental thresholds are reached. The USACE did not make an initial determination in its public notice on whether the impacts to 1,000 acres of wetlands, including over 100 acres of mangroves, would result in an adverse impact on EFH or federally managed fishery species noting the NRC is the lead federal agency for the EIS and is responsible for the EFH consultation.

Table 1: Summary of NRC's initial determination on effects to EFH and HAPCs (modified from EFH Assessment Table 7-1).

Action or Activity	*Impact type*	*Mangrove*	*Seagrass and estuarine bottom*
Construction of reclaimed wastewater system	Habitat disturbance or loss	No adverse impacts	No adverse impacts
Operation of Units 6 and 7 cooling systems using reclaimed wastewater	Entrainment or impingement	No adverse impacts	No adverse impacts
	Cooling-tower deposition	No adverse impacts	No adverse impacts
Construction of RCW cooling system	Habitat disturbance or loss	Minimal temporary impacts on mangroves in the vicinity of RCW caissons	No adverse impacts
Operation of Units 6 and 7 cooling systems using RCWs	Noticeable alternations to nearshore salinity in Biscayne Bay	Minimal impacts expected, but localized, temporary minimal adverse impacts could occur from increased salinity in nearshore areas near the Turkey Point site	Minimal impacts expected, but localized, temporary minimal adverse impacts from increased salinity in nearshore areas near the Turkey Point site
	Entrainment or Impingement	No adverse impacts	No adverse impacts under normal operation; minimal to substantial localized impacts if frac-out occurred
	Cooling-tower deposition	No adverse impacts	No adverse impacts
Equipment barge unloading Area expansion	Water-quality degradation; noise emissions, habitat disturbance or loss	No adverse impacts	Minimal impacts expected, but localized, temporary substantial adverse impacts from water-quality changes and noise emissions could occur during dredging operations and sheet-pile installation adjacent to the unloading area
Deep-aquifer injection of blowdown	Indirect impacts on water quality that affects EFH or HAPCs	No adverse impacts	No adverse impacts

Description of Project Components Most Relevant to the EFH Consultation

The public notice describes the project as having six main components, and the draft EIS describes 13 project components (draft EIS, Table 4-2). To streamline review, the NMFS identified elements of the project most relevant to the EFH consultation to include the filling of wetlands, the construction and operation of the RCW cooling system, and to a lesser degree, the dredging of the barge basin.

Equipment Barge Canal Expansion

The equipment-barge uploading area at the northeastern portion of the Turkey Point Nuclear Facility would be expanded by dredging 0.75 acres of estuarine bottom, including 0.10 acres of seagrass habitat, to support construction activities. The NRC and FPL propose use of turbidity curtains to limit water

quality degradation caused by dredging. The EFH assessment states the basin contains sparse growth of seagrass and macroalgae. The NMFS requests the final EIS and EFH assessment include a more detailed habitat characterization and compensatory mitigation to offset the seagrass impacts.

Wetland Fill

In order to construct Units 6 and 7 and related infrastructure, including pipelines and the RCWs, the NRC and FPL propose to fill approximately 1,000 acres of wetlands. The public notice does not identify the impacts to mangroves from this work; however, the draft EIS indicates approximately 105 acres of mangroves would be filled, permanently or temporarily to facilitate construction (Table 2). The NRC expects about half of the mangrove impacts to be construction related and temporary. Project plans in the final EIS and EFH assessment should reflect all practicable avoidance and minimization of impacts to mangroves. In addition, a compensatory mitigation plan should be provided demonstrating, through a functional assessment comparing impact and mitigation areas, that sufficient mitigation is proposed. The mitigation plan should describe how mangrove temporary impact areas would be re-graded to appropriate elevations and monitored to ensure mangrove vegetation returns to the impacted sites at locally appropriate densities. Performance measures, monitoring criteria, schedule, and frequency should also be identified in the plan (see the Federal Compensatory Mitigation Rule dated April 2008).

Table 2: FPL proposed land disturbance on the Turkey Point site and Florida land use, cover, and forms classification system (FLUCFCS) summary for the different categories of mangrove impacts (modified from Table 4-1 in the draft EIS)

Land disturbance activity	*Acreage of mangrove impacts by FLUCFCS*			
	Dwarf	*Head*	*Swamp*	*Swamp/Exotic*
Unit 6 & 7 plant area		12.14		
Western lay down area	16.87			
Training parking			5.61	1.85
Nuclear administration parking			18.68	
Transmission laydown lines	0.31			
RCW area, RCW laydown area, FPL reclaimed wastewater treatment	42.82			
Treated reclaimed wastewater delivery pipelines	3.06			
RCW delivery pipeline			3.98	
Total = 105.32 ac	**63.06**	**12.14**	**28.27**	**1.85**

Construction and Operation of RCWs

Construction of RCW: The draft EIS and EFH assessment note frac-outs may occur during the drilling needed for the RCWs; however, the discussion focuses only on one aspect of what constitutes a frac-out. The NRC describes a frac-out as one or more significant fractures of the limestone above the RCW lateral pipelines altering fine-scale water flows during RCW system operation potentially resulting in impingement or entrainment of early life stages of fishery species. It is not clear to the NMFS how the NRC views this impact. While the NRC notes monitoring and detecting this type of frac-out and its impacts would be difficult, it goes on to conclude no adverse impacts would result from the entrainment or impingement of aquatic resources but later states there would be small, localized adverse effects. The NMFS requests the final EIS and EFH assessment clarify this issue.

Neither the draft EIS nor the EFH assessment describe another type of frac-out associated with horizontal directional drilling (HDD), the construction method for the RCWs. During HDD, drilling mud can escape into the environment through fractures in the rock potentially degrading EFH. The Southeast Florida Coral Reef Initiative's *Best Management Practices (BMPs) for Construction, Dredge and Fill and Other Activities Adjacent to Coral Reefs*[1] notes the risk of frac-outs occurring can be reduced through proper geotechnical assessment practices and prudent drill planning and execution. The BMPs also describe how the extent of damage from a frac-out can be limited by carefully monitoring the hydraulic pressure and having the appropriate response equipment and contingency plans ready in the event that a

[1] Available at: *www.floridadep.org/coastal/programs/coral/reports/MICCI/MICCI_6_BMP_Manual.pdf*

frac-out occurs. While these measures and BMPs are useful in reducing and limiting the occurrence of frac-outs, direct measures of borehole pressure may be necessary for the agencies to have reasonable assurance that damage from frac-outs would be minimal. Stauber et al. (2003) presents a method for predicting borehole pressure by means of a demand-capacity analysis. With a calculated maximum allowable borehole pressure curve for a given HDD bore profile, specifications could require borehole pressure be maintained below the maximum allowable value or to maintain rheological properties within specified limits.

The NMFS requests the NRC update final EIS and EFH assessment to describe plans to perform close monitoring along the RCW lateral pipelines during construction to ensure frac-outs are identified and remediated immediately and, if necessary, compensatory mitigation implemented. To assist with developing this monitoring plan for the Turkey Point RCWs, the NMFS will send separate from this letter monitoring plans used by the NMFS, USACE, and Florida Department of Environmental Protection (FDEP) for similar projects.

Operation of RCWs: The primary source of cooling water for the proposed Turkey Point Units 6 and 7 would be reclaimed wastewater from the Miami-Dade Wastewater and Sewer Department. Because the availability of the reclaimed wastewater supply will vary, FPL plans to install four RCWs on the Turkey Point peninsula to provide a secondary source of cooling water. Each RCW would consist of a central reinforced concrete caisson with 8 to 12 lateral pipelines (horizontal collector lines) extending out from the caisson. The horizontal extent of the RCW lateral pipelines would be up to 900 feet beneath Biscayne Bay and would be approximately 25 to 40 feet below the bay bottom. In order to maintain the RCW system, the RCWs would be used up to 60 days per year with a maximum saltwater makeup-water rate under normal operating conditions being 43,200 gpm. The EFH assessment does not address use of the RCW system outside this maintenance; i.e., when it becomes the main water supply when the primary supply is inadequate. The NMFS recommends the final EIS and EFH assessment analyze the effects of operating the RCW as the main water supply when the reclaimed wastewater becomes unavailable for longer periods than expected. Alternatively, the NRC or the USACE may need to reinitiate EFH consultation prior use of RCWs for time periods exceeding those evaluated in the draft EIS and EFH assessment.

Operation of the RCWs would result in hypersaline conditions and thermal events within estuarine habitats in Biscayne Bay known to support federally managed species. The severity of these effects would depend on annual rainfall levels (i.e., more severe effects are expected during dry years than wet years). This is of concern because hypersaline conditions and thermal events can be bio-energetically expensive and reduce capacity for reproduction or growth. Impacts to seagrass habitats and fishery resources from the RCW operation are not quantified in the public notice. However, the draft EIS attempts to quantify these effects based the modelling FPL has completed to predict the influence RCWs will have on local salinity regimes in Biscayne Bay (provided in the draft EIS Appendix G). The draft EIS also briefly describes how the recent upgrades of Turkey Point Units 3 and 4 have led to increased discharge temperatures within the cooling canals contributing to an extensive algal bloom (draft EIS, Section 7.2.2.1). Based on maps provided with the public notice, it appears the RCWs would collect water in the vicinity of elevated temperature discharge plumes from the cooling canals.

The NMFS believes applying the results of the modelling conducted by FPL to predict impacts to seagrass and federally managed species is problematic because it focuses on mean conditions as opposed to ecologically relevant conditions. In addition, the modelling performed was based on an inaccurate assumption that the cooling canals are a closed system (i.e., no exchange between the canals and Biscayne Bay). A more reliable way to analyze the impacts would be to examine ecologically relevant scenarios, such as the frequency, duration, and intensity of the salinity and temperature disturbance (i.e., extreme)

events. In addition, the impact analysis should be updated to characterize and quantify the level of exchange between the cooling canals and Biscayne Bay and then incorporate that working understanding of the level of exchange into the analysis of impacts and the development of monitoring to verify those impacts.

Need for a Biological Monitoring and Adaptive Management Plan

A biological monitoring and adaptive management plan based on ecologically relevant impacts should be developed, and the NMFS offers to assist development of the plan. The plan should be developed to measure impacts predicted from a reliable impact assessment that considers ecologically relevant water quality conditions and interactions between the cooling canals and Biscayne Bay waters. The plan should be implemented in perpetuity for the life of the RCWs and include no less than three years of baseline monitoring (pre-operation) during dry years to characterize the ambient conditions at the site.

FPL and the National Park Service, Biscayne National Park (NPS), are currently conducting water quality monitoring, and the NMFS recommends installing an additional four or five continuous water quality monitoring sites with similar equipment to assess the frequency duration, and intensity of hyperthermal and hypersaline events. The NMFS can assist in determining the location of the sites (spatially with respect to other sites and the work proposed and location in the water column). The water quality monitoring component of the plan should clearly identify the environmental thresholds requiring adaptive management and options to manage the operation. Because this type of monitoring generates a lot of data, an efficient plan to manage, analyze, and share data is also recommended.

Seagrass monitoring should also be a component of this plan. The NMFS reviewed the FDEP Certificate of Conditions (May 2014) containing recommendations for monitoring changes to the seagrass communities near the Turkey Point Nuclear Plant resulting from RCW operation. The NMFS believes the monitoring effort would be more efficient by incorporating relatively new approaches, for example using geo-spatial video-based survey techniques described in Lirman et al. (2008). The monitoring plan should demonstrate capability in detecting the level of biological change that constitutes an adverse effect to seagrass and fishery resources in Biscayne Bay. The sampling plan should be supported by a power analysis to demonstrate the sampling proposed is sufficient to detect the expected impacts.

One way to efficiently accomplish developing the biological monitoring and adaptive management plan would be to establish and interagency team to contribute to the development of the plan. Ideally, the team should be composed of staff from the NMFS, NPS, NRC, USACE, U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service, FDEP, Florida Fish and Wildlife Commission, Miami-Dade Department of Environmental Resources Management, South Florida Water Management District, and FPL. The final plan implemented should reflect substantial input from this team. The NMFS, National Park Service, and others are currently planning to meet May 29, 2015, in Homestead to discuss this monitoring need (please contact Jocelyn Karazsia for additional information about this meeting, her contact information is at the end of this letter)

Sequential Mitigation of Impacts to Essential Fish Habitat

Under the Clean Water Act, its implementing regulations, and EPA guidelines, wetland impact avoidance and minimization are the first two steps in sequential mitigation, and the third step is compensatory mitigation for unavoidable impacts. The public notice does not describe any measures to avoid or minimize impacts to mangroves or seagrass from the project. Based on the drawings provided with the notice, it appears 100 percent of the wetlands on the site are proposed for impact. The public notice states the applicant submitted a mitigation plan that includes debiting of mitigation credits from the FPL Everglades Mitigation Bank, purchasing of mitigation credits from the Hole-in-the-Donut in-lieu-fee program, and constructing permittee-responsible mitigation. The public notice, draft EIS, and EFH

assessment neither describe the permittee-responsible mitigation, how well the credits from these mitigation banks match the impacts, nor the number of credits required. In letters to the USACE dated April 9, 2015, and May 4, 2015, the EPA provides additional detail on concerns about how the sequential mitigation process has been implemented for this project.

The NMFS believes the proposed mangrove fill is not consistent with EPA' s Guidelines for Specification of Disposal Sites for Dredged or Fill Material. The fundamental precept stated in 40 CFR 230.1(c) that "dredged or fill material should not be discharged into the aquatic ecosystem unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern" would not be met by this project. The basic purpose of the project, as stated in the public notice is to meet the public's need for electric energy. Based on guidance provided by 40 CFR 230.10(a)(3), energy development does not require access or proximity to or siting within wetlands to achieve the basic purpose (i.e., energy production is not water dependent). In discussing the water dependency requirement, the guidelines state that for non-water dependent projects, practicable alternatives that do not involve special aquatic sites (e.g., wetlands adjacent to and within the Biscayne Bay Aquatic Preserve) are presumed to be available.

EFH Conservation Recommendations

Based on the information provided in the public notice, the NMFS concludes the proposed dredging of seagrass habitat, filling of mangrove habitat, and RCW construction and operation would adversely impact EFH. Section 305(B)(4)(A) of the Magnuson-Stevens Act requires the NMFS to provide EFH conservation recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated fishery resources:

- Project plans within the Clean Water Act permit and project license should reflect all practicable avoidance and minimization of impacts to mangroves and seagrass habitats and demonstrate adequate compensatory mitigation is planned, as shown through a functional assessment comparing impact and mitigation areas. The mitigation plan should describe how mangrove impact areas will be re-graded to appropriate elevations and monitored to ensure mangrove vegetation returns to the impacted site. Performance measures, monitoring criteria, schedule, and frequency should also be identified in the plan.
- The final EIS and EFH assessment should analyze the effects of operating the RCW as the main water source when the primary water supply becomes unavailable for periods longer than 60 days or commit to notifying or reinitiating consultation with the NMFS when this occurs.
- The final EIS and EFH assessment should characterize and quantify the level of exchange between the cooling canals and Biscayne Bay in order to ensure the biological monitoring implemented for RCW operation considers the interrelatedness and water exchange of the cooling canals and the RCW collection area.
- The Clean Water Act permit and project license should require implementation of a biological monitoring and adaptive management program to assess changes in salinity and temperature in Biscayne Bay resulting from RCW operation. The NMFS offers to assist in the development of this plan.
- The Clean Water Act permit and project license should require the permittee to quickly identify and remedy both types of frac-outs in the case they occur.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and implementing regulation at 50 CFR Section 600.920(k) require the USACE and NRC to provide a written response to this letter within 30 days of its receipt. If it is not possible to provide a substantive response within 30 days, an interim response should

be provided to NMFS. A detailed response then must be provided prior to final approval of the action. The detailed response must include a description of measures proposed by the USACE and NRC to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with the EFH conservation recommendations, the USACE and NRC must provide a substantive discussion justifying the reasons for not following the recommendations.

In accordance with section 7 of the Endangered Species Act of 1973, as amended, it is the responsibility of the USACE and NRC to review and identify any proposed activity that may affect endangered or threatened species and their designated critical habitat. Determinations involving species under NMFS jurisdiction should be reported to NMFS Protected Resources Division at the letterhead address.

Thank you for the opportunity to provide comments. Please direct related correspondence to the attention of Ms. Jocelyn Karazsia at our West Palm Beach office, 400 North Congress Avenue, Suite 110, West Palm Beach, Florida, 33401. She may be reached by telephone at (561) 249-1925, or by e-mail at Jocelyn.Karazsia@noaa.gov.

Sincerely,

Pam Willer

/ for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

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FWS, Ashleigh_Blackford@fws.gov, Pattrick_Pitts@fws.gov
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BNP, Elsa_Alvear@nps.gov, Sarah_Bellmund@nps.gov
SAFMC, Roger.Pugliese@safmc.net
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F/SEC2, Joe.Serafy@noaa.gov
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F/SER47, Jocelyn.Karazsia@noaa.gov

Literature Cited

Lirman, D., Deangelo, G., Serafy, J., Hazra, A., Hazra, D., and Brown, A. 2008. Geospatial video Monitoring of nearshore benthic habitats of Western Biscayne Bay (Florida) using the shallow-water positioning system (SWaPS). Journal of Coastal Research 24(1A):135-145.

Stauber, R., Bell, J., and Bennett, R. 2003. A Rational Method for Evaluating the Risk of Hydraulic Fracturing in Soil during Horizontal Directional Drilling. Proceedings of North American Society of Trenchless Technology and International Society of Trenchless Technology International Conference (a.k.a. NoDig 2003), Las Vegas, Nevada, March 31, 2003.

Turkey Point Units 6 & 7 Project
Section 404 Permitting

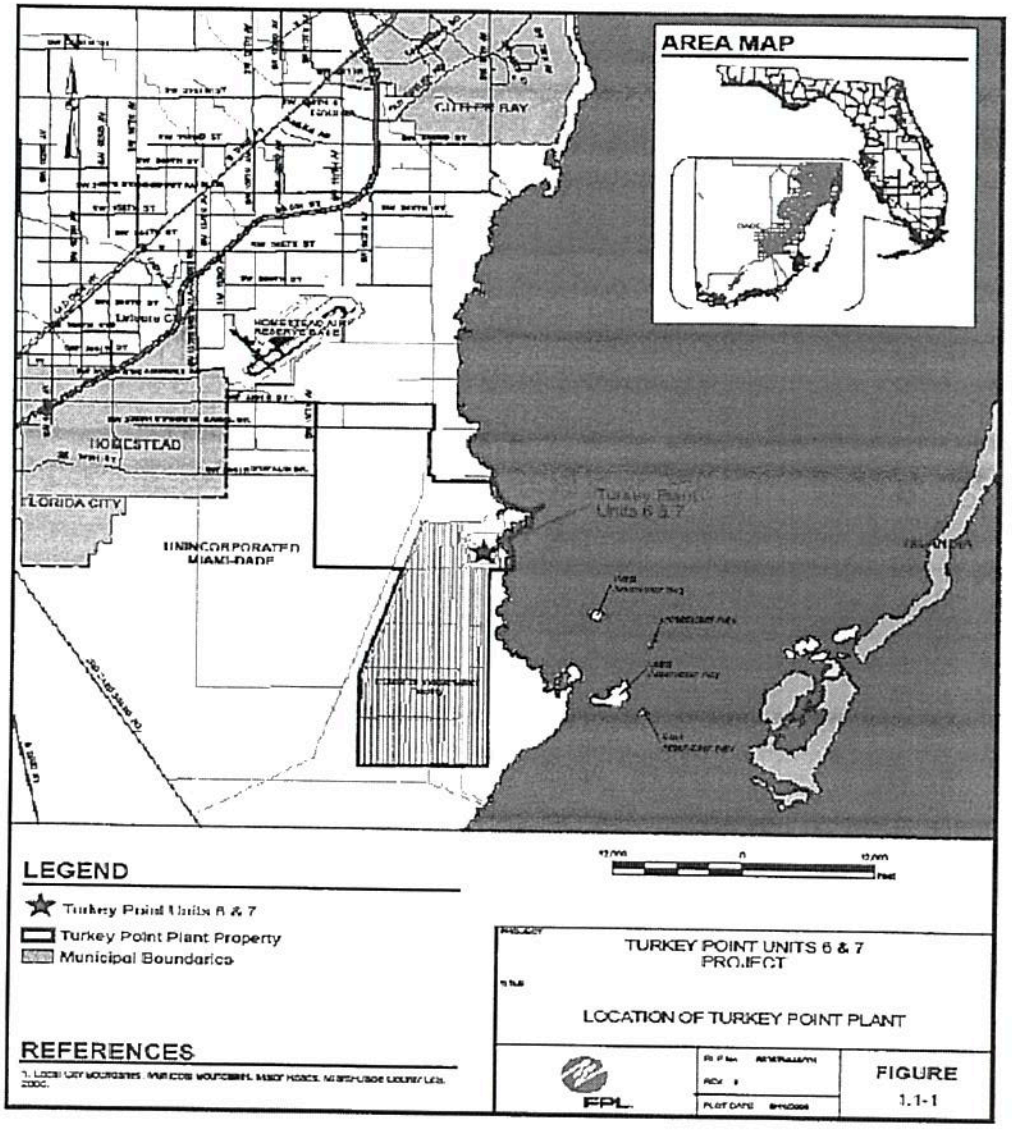
US Environmental Protection Agency

June 10, 2015

Agenda

- **Project Overview**
- **Project Features**
- **Wetland Impacts and FPL Mitigation Plan**
- **Status of State and Federal Licensing and Permitting**

Turkey Point Plant Property

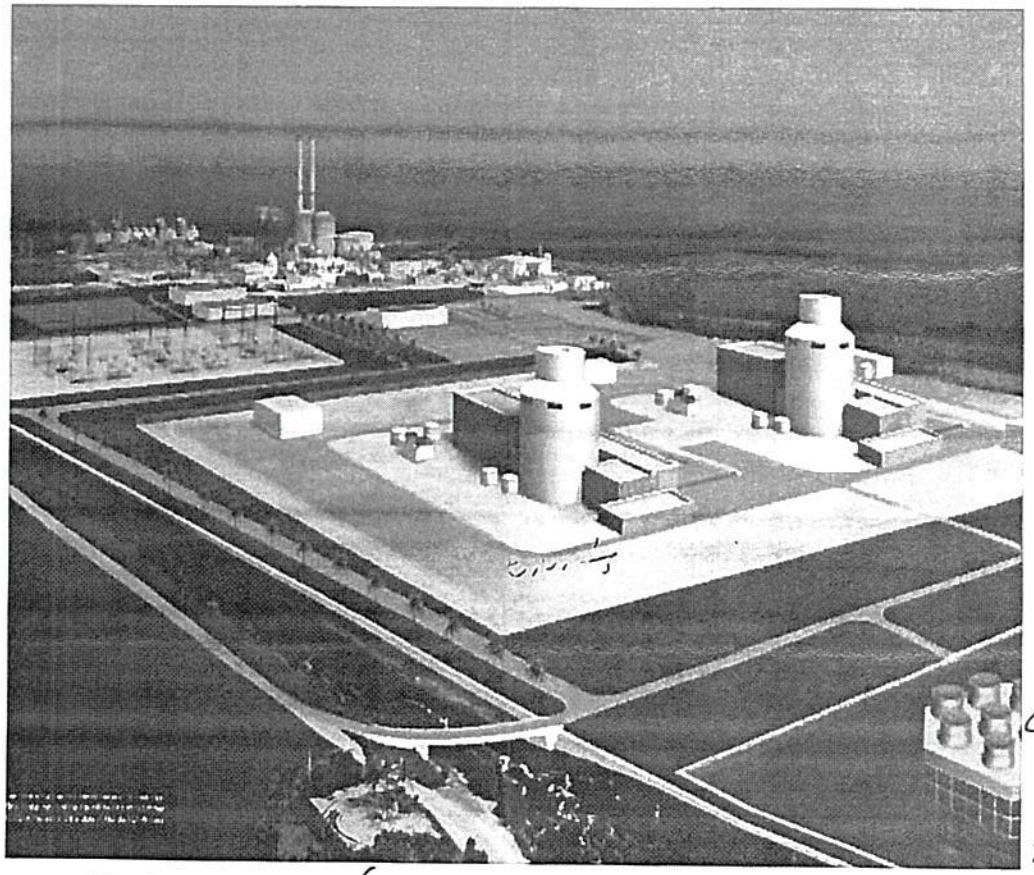


- Turkey Point Plant site is approximately 25 miles south of Miami
- Four generating units at the Turkey Point Plant site, including two nuclear units
- Approximately 9,400 acre power plant site, including industrial wastewater treatment facility

FPL.

Turkey Point Units 6 & 7 Project

- Two Westinghouse AP1000 units – approximately 1100 MW each
- New support facilities – administration and training buildings, parking areas, substation
- Water treatment and delivery infrastructure
- Temporary construction access road improvements
- Transmission improvements



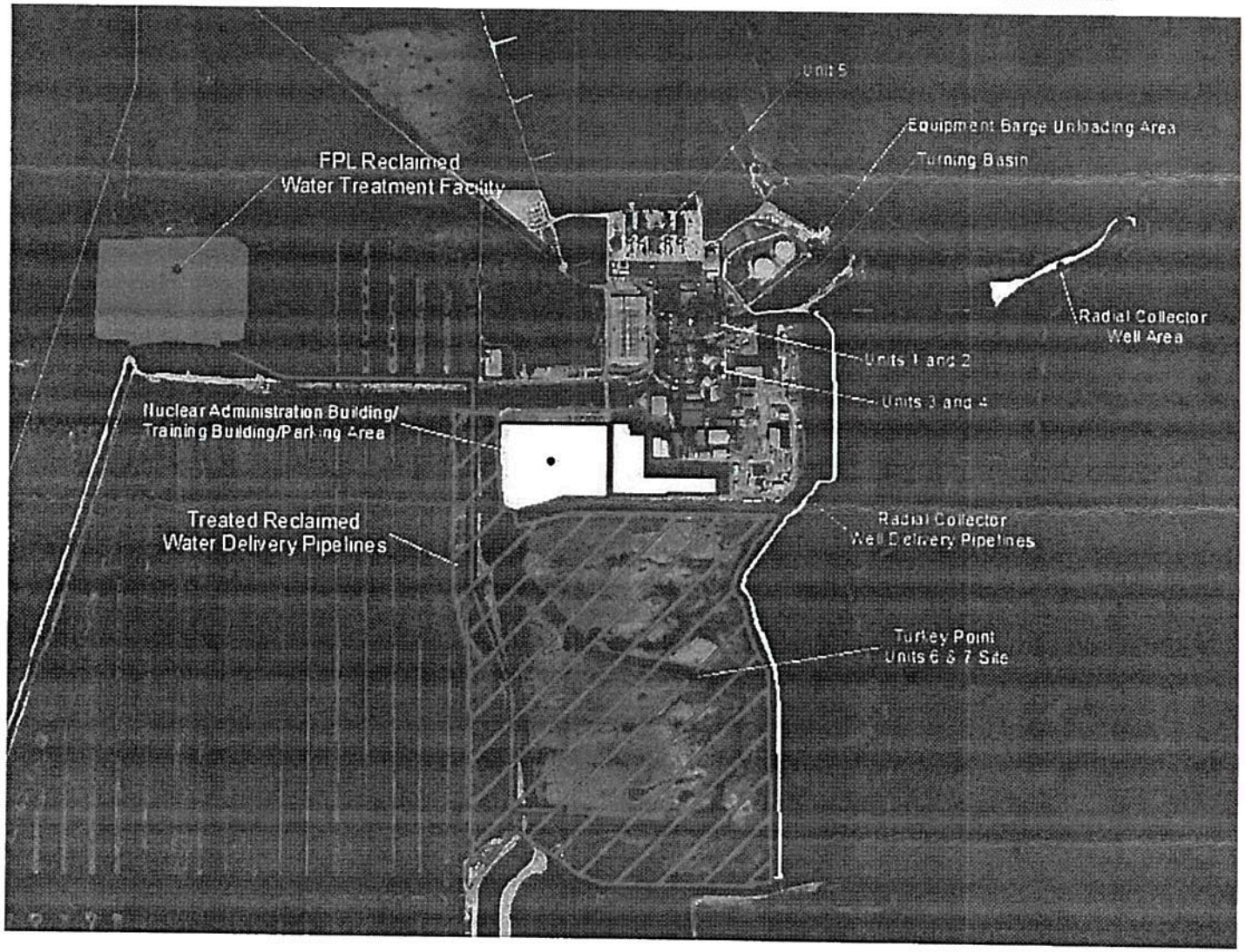
Turkey Point Units 6 & 7 Project Rendering

– 250 acres of wetland impact

– Came in on palm drive

– New roads for construction then road will be removed

Turkey Point Units 6 & 7 Site Features



Will treat the city's reclaimed water more for use in cooling

(yellow & red are new facility

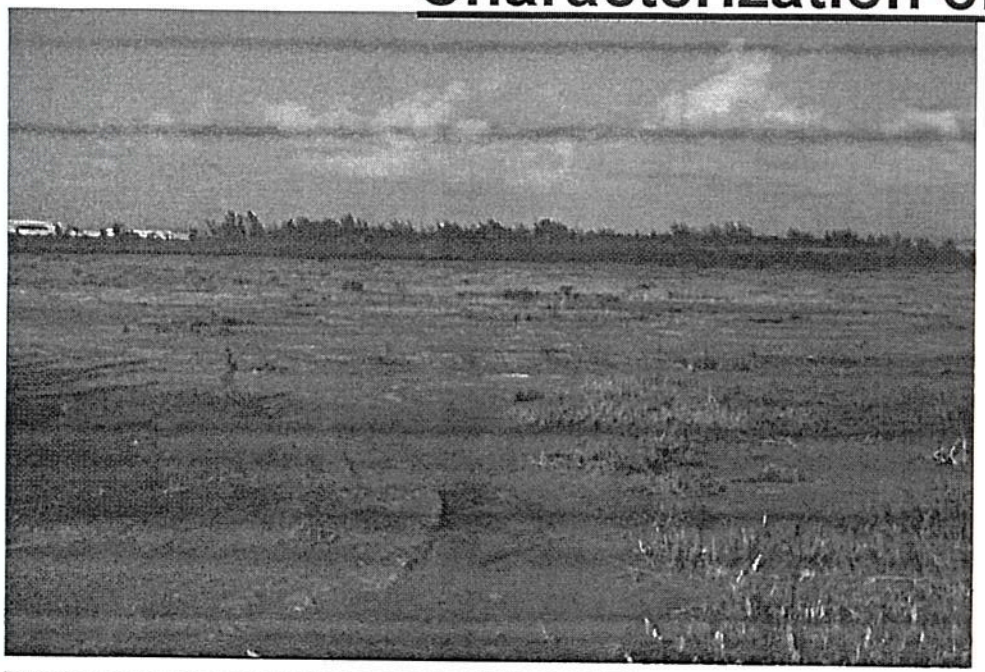
Project Wetland Impacts

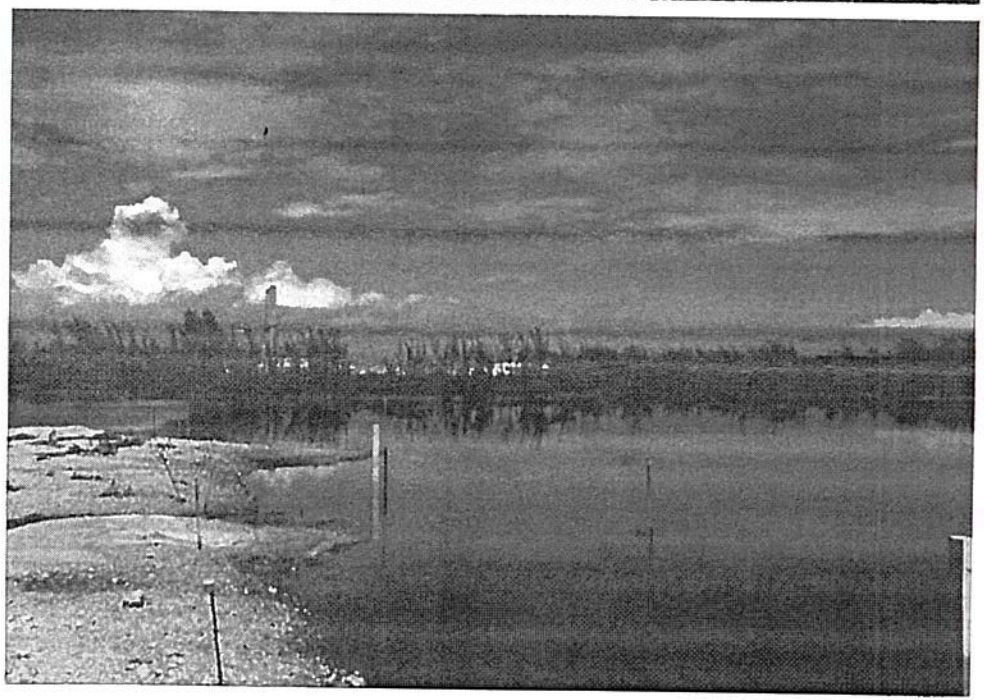
Project Area	Wetland Impacts (acres)
Units 6 & 7 Site	250.2 D
Associated Non-Linear Facilities • Nuclear Admin/Training Bldgs. & Parking • Reclaimed Water Treatment Facility • Treated Water Pipeline • Radial Collector Well Delivery Pipelines	69.8 D 6.4 T – P.I.
Temporary Construction Access Roadway Improvements	81.6 D
Reclaimed Water Pipelines	43.6 T
Transmission Lines	308.2 D – will be less
	TOTAL 710 D 50 T

Source: Turkey Point Units 6&7 Mitigation Plan, Rev. 2 (USACE Supplement) August 2012

D = direct, T = temporary

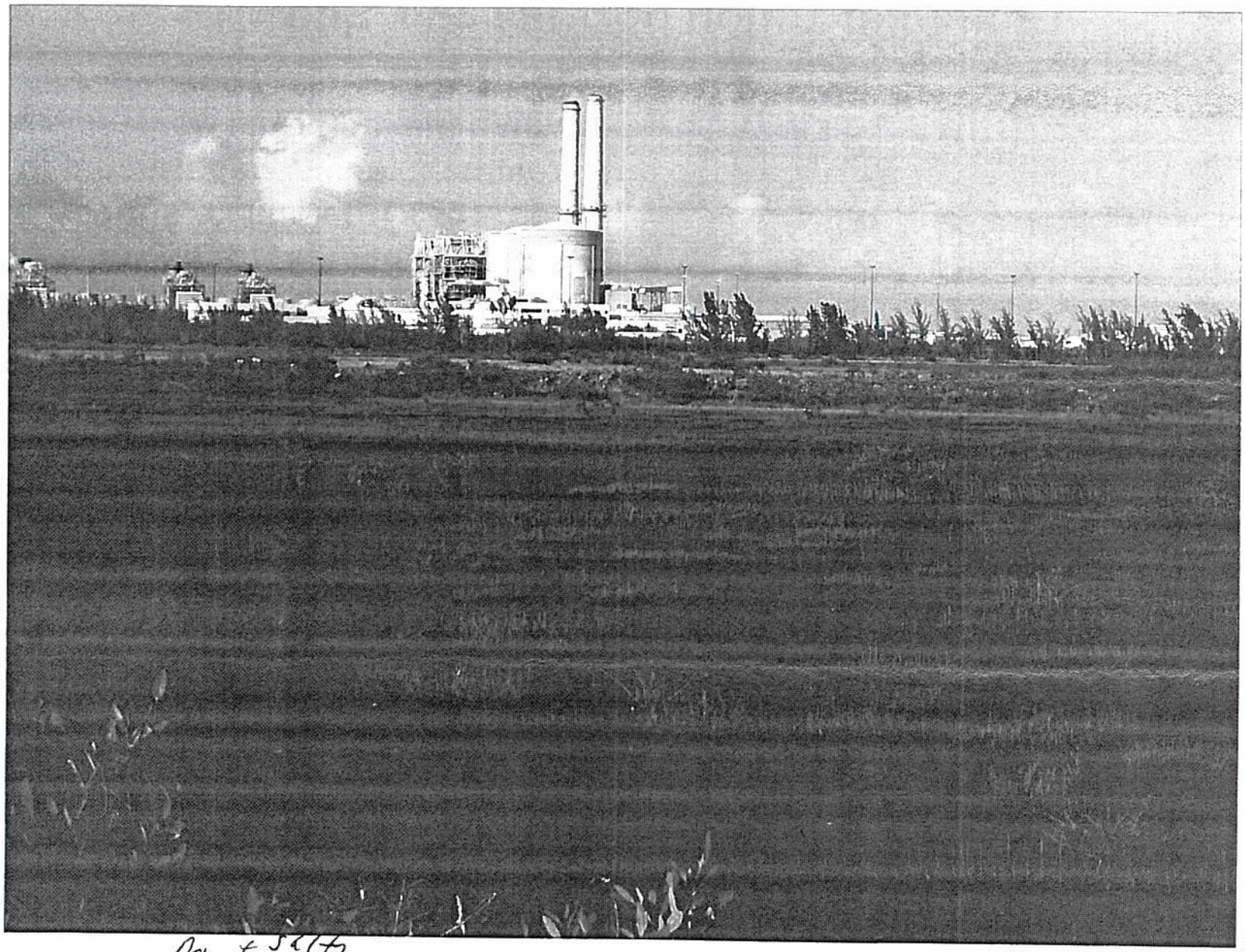
Characterization of Units 6&7 Site





- The Site is entirely contained within the industrial wastewater treatment facility constructed in Feb. 1973. There is no surface water connection to Biscayne Bay.
- Wetlands within the Site have low functional value due to periodic flooding by hypersaline cooling water with elevated temperature, stressed vegetation, and lack of natural tidal hydroperiod
- Approximately 64% of the Site (187.5 ac) is composed of sparsely-vegetated mud flats; dwarf mangroves comprise approximately 10% (29 ac.)

FPL.

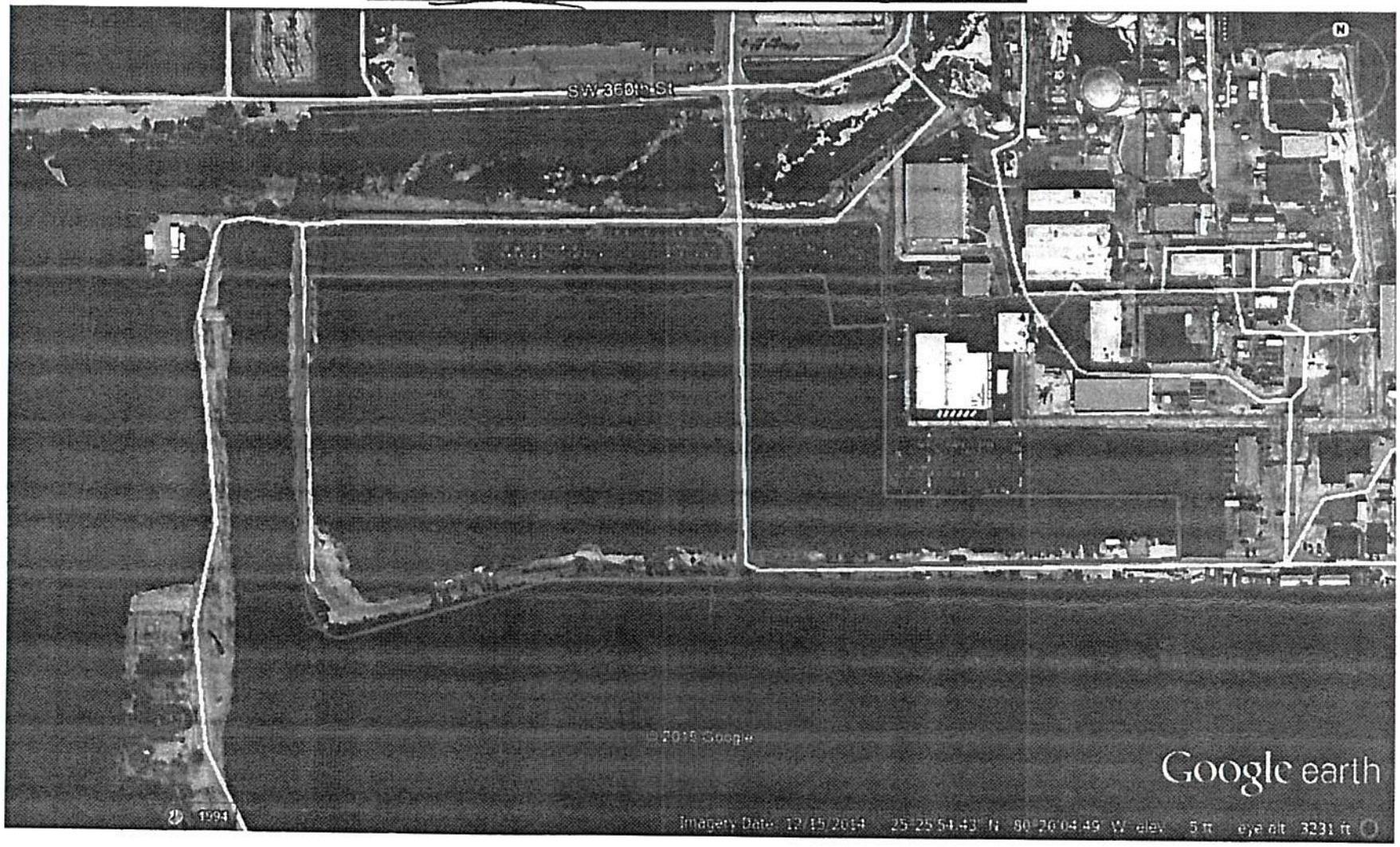


Units 6&7 Site (looking N) - Sparsely vegetated isolated mud flats; exotic Australian pine on spoil pile berms; scattered dwarf mangroves

Units 6&7 Site (looking NE) – Flooded with industrial wastewater system water (hypersaline) limits vegetative communities

FPL.

Characterization of Nuclear Administration/Training Buildings and Parking Area



Isolated wetland parcel of mangrove, willow and exotic Brazilian pepper, surrounded by existing Turkey Point Plant roadways and parking areas

FPL.

Training/Administrative Building and Parking Area – Brazilian pepper

Characterization of Reclaimed Water Treatment Facility

Palm Drive

Square area w/ ~~trees~~ Australian pine

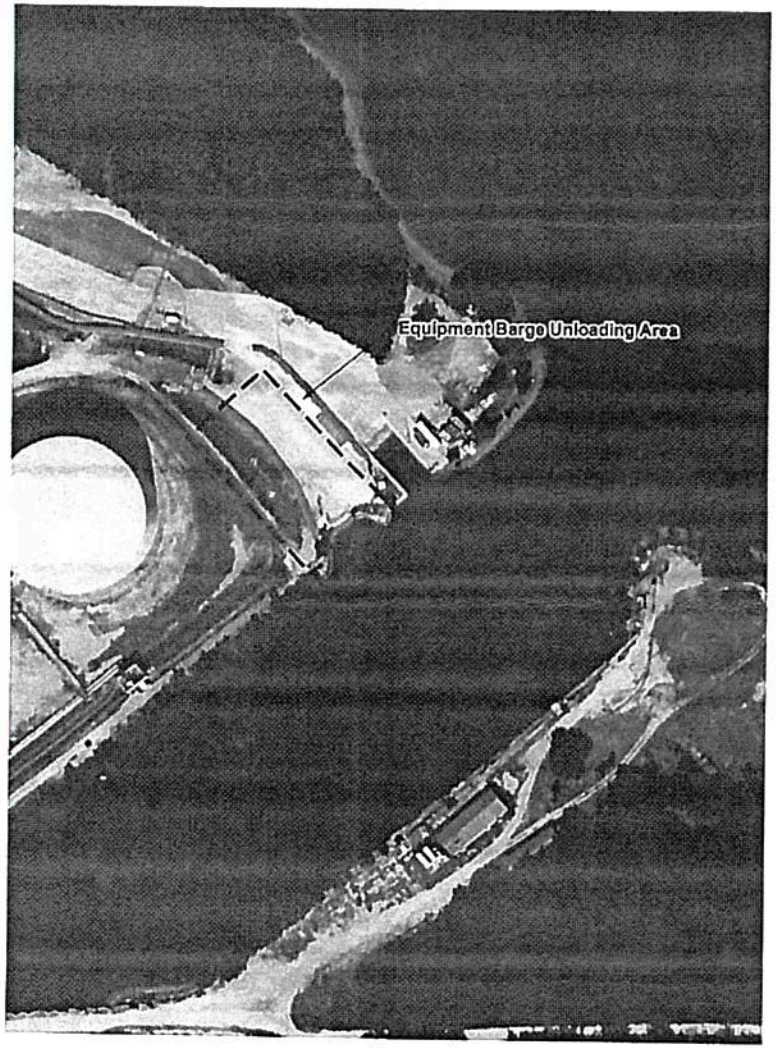
Square will be TP location

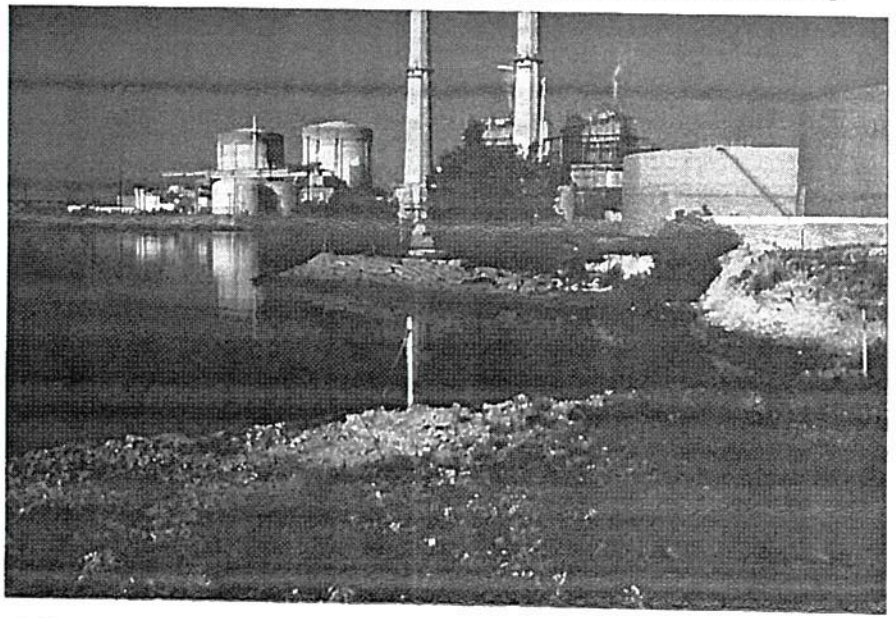
39.5 acres of wetland impact

Reclaimed Water Treatment Facility location – Australian pine and excavated canals – some dwarf mangrove

FPL.

Characterization of Equipment Barge Unloading Area





- Excavation of uplands between existing boat basin and tank
- 0.1 acre of dredge to connect to existing turning basin
- Sheet piling and erosion controls to prevent turbidity during dredging
- Minimal seagrass impacts (<0.01 ac) due to depth of existing turning basin and rocky substrate

Fuel oil tanker turning basin

will be used to house equipment during construction

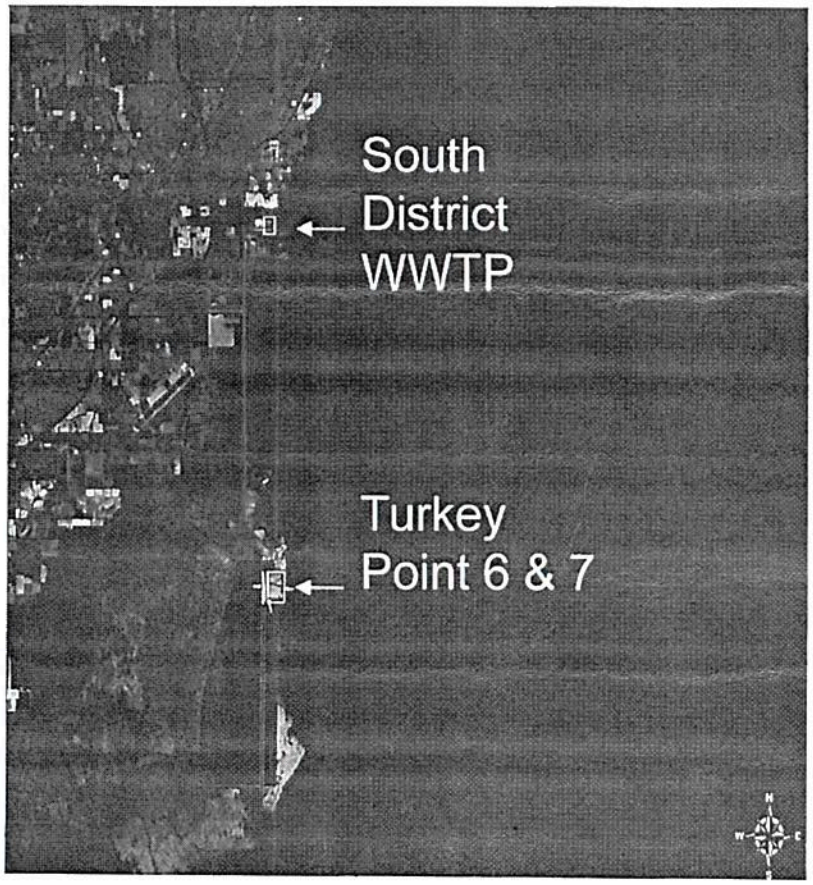
FPL.

Project will use reclaimed water from Miami-Dade County as its primary source of cooling water for electric generation

9 miles long

Reclaimed Water

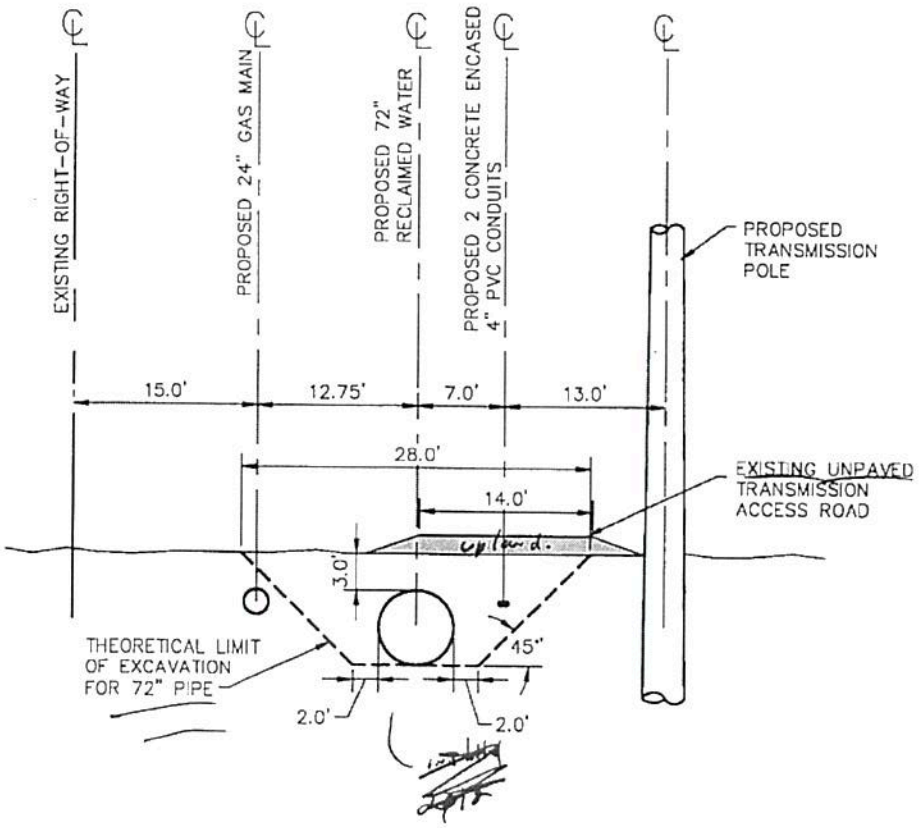
- A cost-effective beneficial use of reclaimed municipal wastewater
- County will own/operate a 9 mile reclaimed water pipeline from South District Wastewater Treatment Plant
- FPL will build a wastewater treatment facility on site to further manage nutrient and mineral content
- Does not use water targeted for Everglades restoration



The use of reclaimed water reduces demand on other water resources for cooling

FPL.

Majority of reclaimed water pipeline located within existing transmission line right of way



- Impacts to wetlands for pipeline installation are temporary
- Within the transmission line right-of-way the pipeline will be placed under the existing access road
- Construction area will be limited to 75 ft. in width
- In 2011 a natural gas main was installed by Florida Gas Transmission within the right-of-way so vegetation within the construction area has been recently disturbed

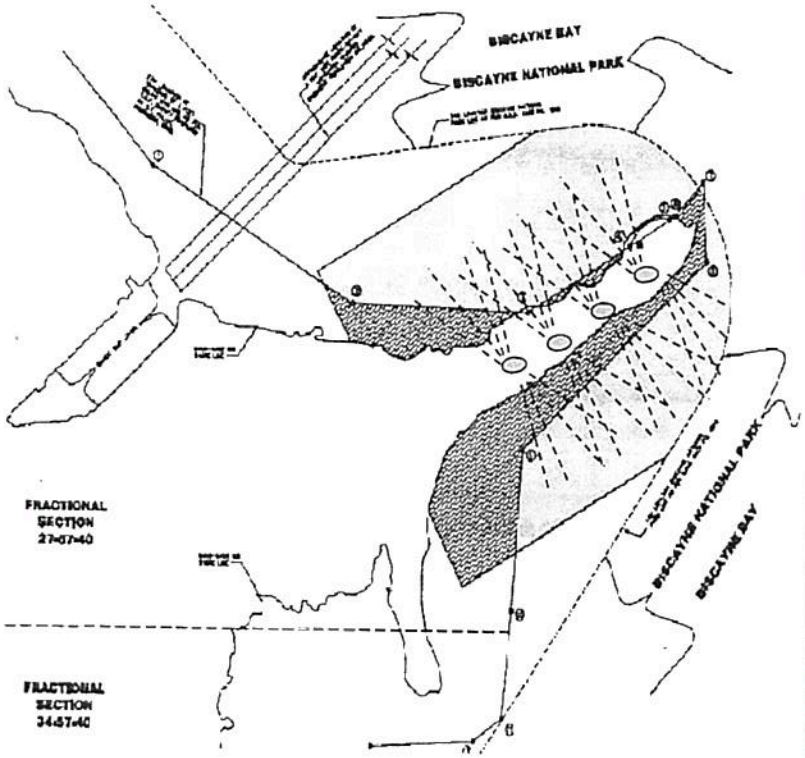
Temporary wetland impacts have been minimized through co-location with existing transmission line access road

FPL.

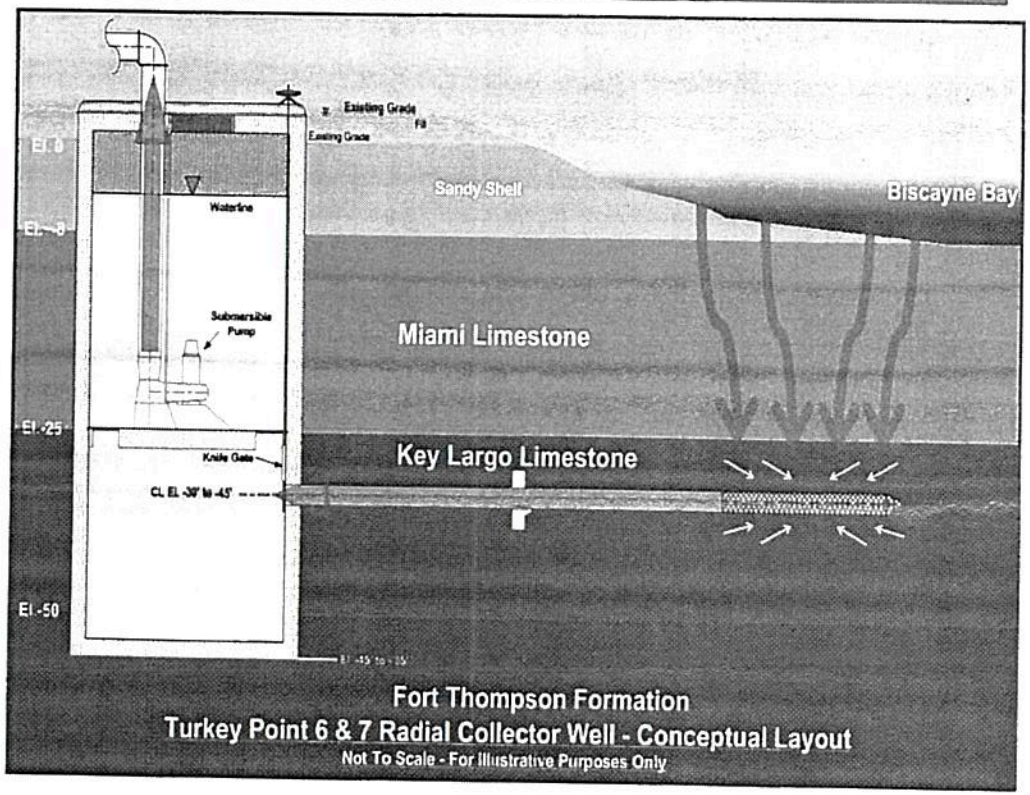
Radial Collector wells provide a back-up cooling water supply when reclaimed water is not available

Conceptual Radial Collector Well Design

This will only be an emergency backup for if the city's reclaimed water fails



Pumping Activities at Equilibrium



Well design draws saltwater from beneath Biscayne Bay avoiding impacts to marine environment

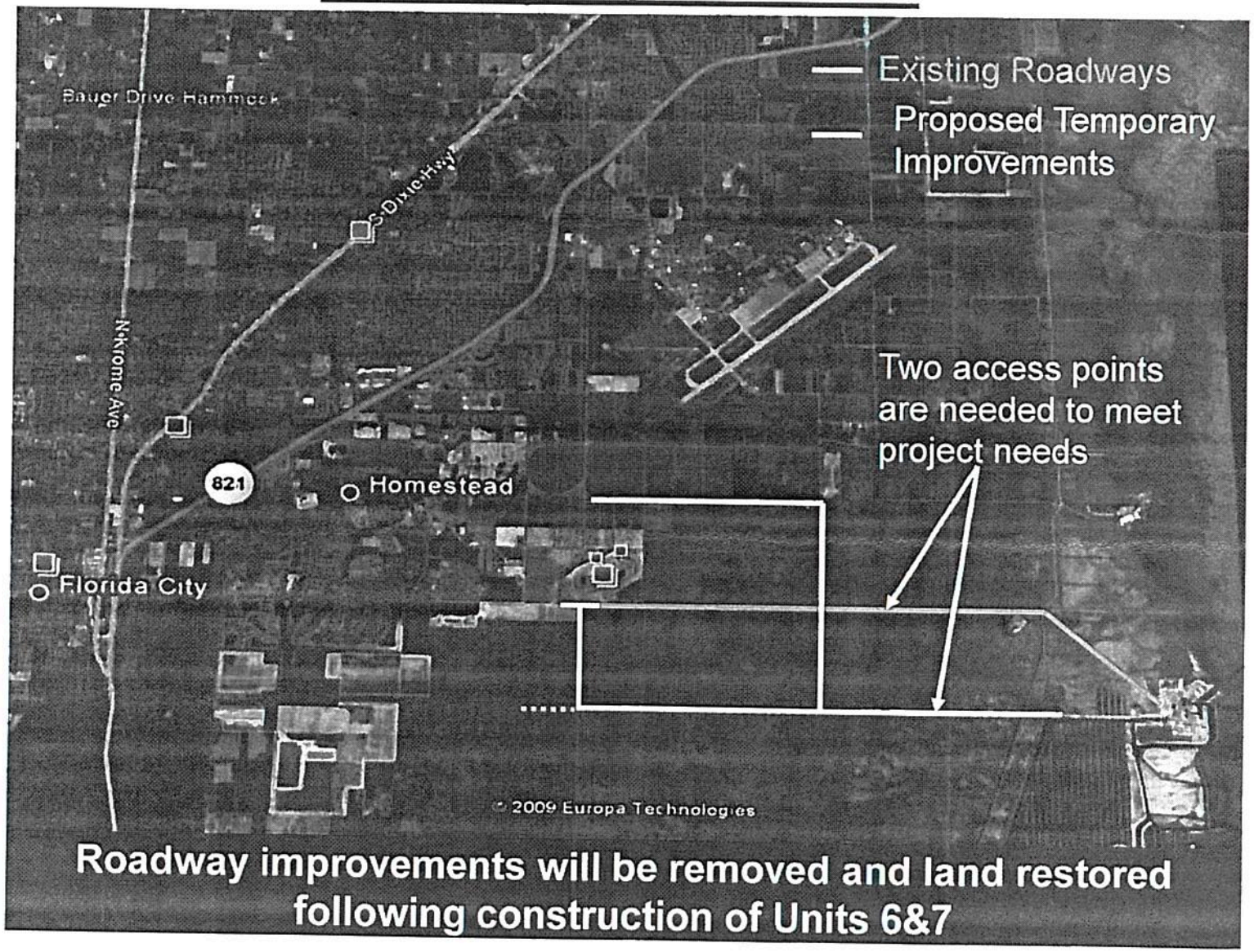
FPL.

Upland area of Turkey Point peninsula proposed for installation of radial collector well caissons

Temporary roadway improvements required to safely allow for construction traffic and existing units operational traffic

where will material go when road is decommissioned

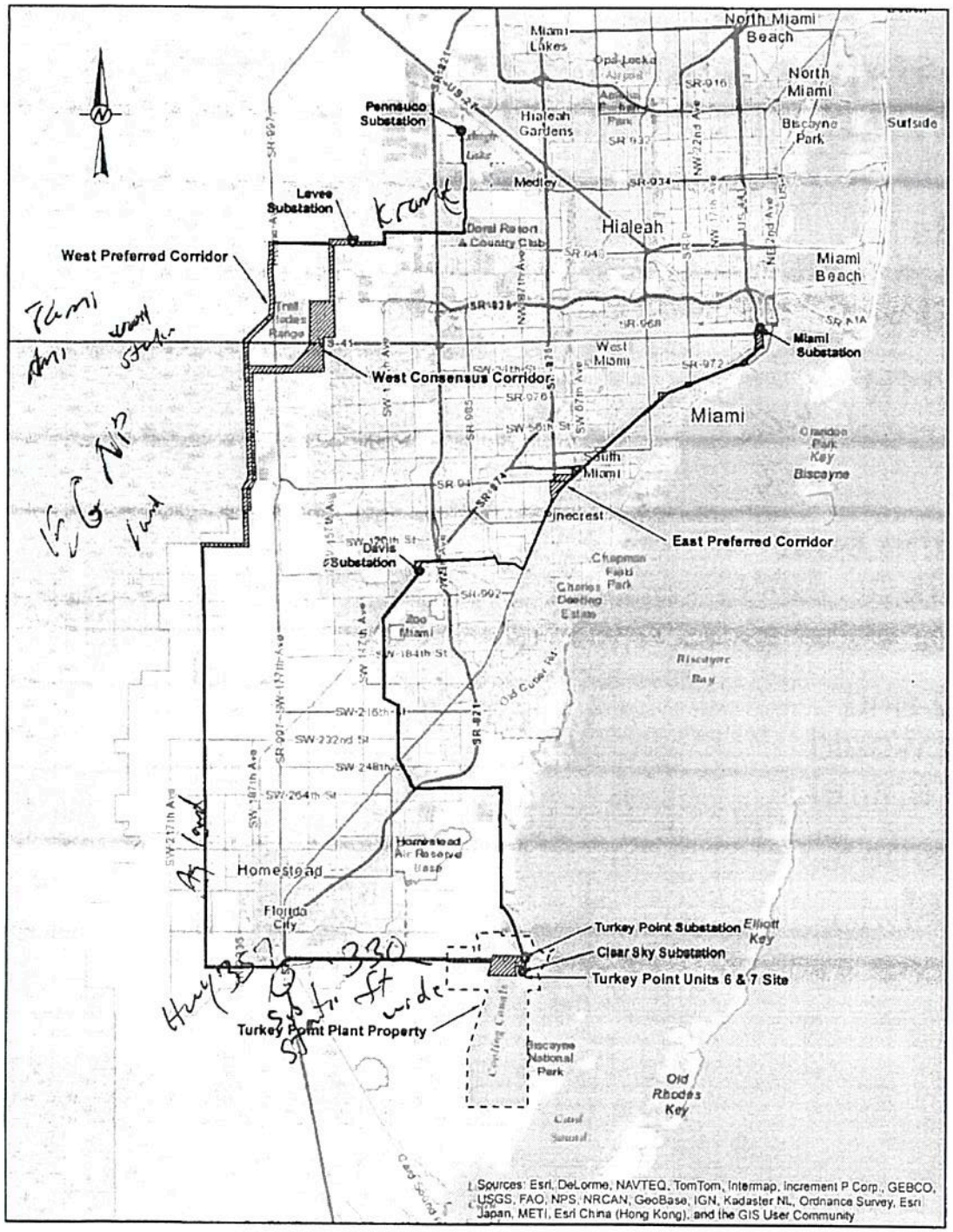
Roadway Improvements



Roadway improvements will be removed and land restored following construction of Units 6&7

Animal protective
- Fencing
- Colored x-ings
- Swale barriers

FPL.



New Transmission Lines:

- Two 500-kV lines Clear Sky to Levee
- One 230-kV line Clear Sky to Pennsuco
- One 230-kV line Clear Sky to Davis; then Davis to Miami

How:

- Utilize existing rights of way where practicable

Why:

- More local transmission capacity is needed
- At summer peak, over 50% of power is imported to Miami-Dade county

FPL.

Through the State Site Certification, the West Consensus Corridor (WCC) was approved as the primary western corridor

- **The WCC minimizes impacts to ENP and wetlands and increases buffer from wading bird rookeries**
- **The corridor departs the L-31N south of Tamiami Trail and goes through Bird Drive basin**
- **The WCC provides land to the east of the L-31N sufficient for all structures**
  - A combination of SFWMD and MDLPA member property would be required to avoid ENP entirely
- **If the WCC cannot be developed, FPL's original corridor (West Preferred) is also certified**

Project Wetland Impacts

Project Area	Wetland Impacts (acres)	Functional Loss (UMAM Credits)	Mitigation Proposed
Units 6 & 7 Site	250.2 D	128.3	EMB Credits
Associated Non-Linear Facilities (Nuclear Admin/Training Bldgs. & Parking, Reclaimed Water Treatment Facility, Treated Water and Radial Collector Well Delivery Pipelines)	69.8 D 6.4 T	53.4	EMB Credits
Temporary Construction Access Roadway Improvements	81.6 D	80.6	SW 320th St. Restoration Site (70%) NW Restoration Site (30%)
Reclaimed Water Pipelines	43.6 T	4.5	NW Restoration Site
Transmission Lines	308.2 D ↓ ≈200	241	West Corridor – HID Credits East Corridor – EMB Credits
TOTAL	710 D 50 T	508	

Source: Modified from Turkey Point Units 6&7 Mitigation Plan, Rev. 2 (USACE Supplement) August 2012

D = direct, T = temporary
EMB = Everglades Mitigation Bank
HID = Hole in the Donut Mitigation Bank

FPL.

Proposed Wetland Mitigation

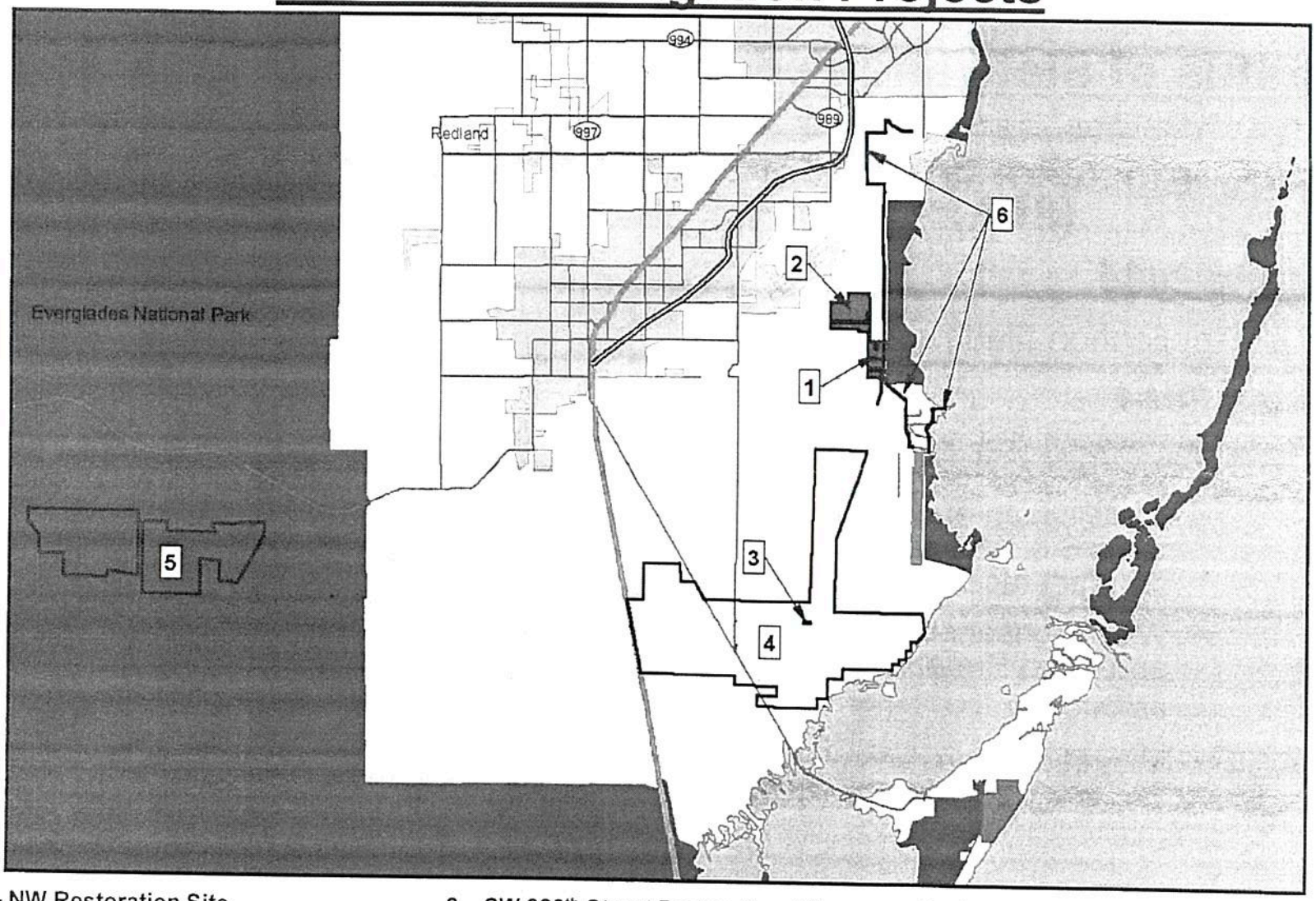
Proposed Mitigation	Activity	Acres	Estimated Functional Lift (UMAM Credits)
NW Restoration Site (Biscayne Sawgrass Preserve)	Vegetative enhancement, hydrologic restoration, preservation	238	35.7
SW 320th St Restoration Site	Vegetative enhancement, hydrologic restoration, preservation	574	56.8
Sea Dade Canal Crocodile Sanctuary	Creation of saline lagoon and crocodile nesting habitat	6.4	N/A
Everglades Mitigation Bank	Mitigation credits	1,409	175.8
Hole in the Donut Mitigation Bank	Mitigation credits	308	241
Pipeline Restoration	Vegetative restoration	46.6	N/A
Temporary Construction Access Roadway Restoration	Removal of temporary roadways, vegetative restoration	TBD	N/A
TOTAL		2,582	509

Further avoidance and minimization of wetland impacts will occur with final transmission line right-of-way engineering design

Source: Modified from Turkey Point Units 6&7 Mitigation Plan Rev. 2 (USACE Supplement) August 2012

FPL.

Location of Mitigation Projects



1 – NW Restoration Site
2 – SW 320th Street Restoration Site
3 – Sea Dade Canal Crocodile Sanctuary
4 – Everglades Mitigation Bank
5 – Hole in the Donut Mitigation Bank
6 – Pipeline Restoration

The State Certification has been issued, the federal review is currently in the draft Environmental Impact Statement stage

Status of State and Federal Licensing and Permitting

Site Certification Application (SCA)

- **June 2009**
  - Application filed
- **May 2014**
  - Final Order issued
    - Certification of Turkey Point Units 6 & 7 Project and ancillary facilities
    - West Consensus Corridor and West Preferred Corridor as backup
    - Mitigation Plan

Combined Construction and Operating License Application (COLA)/ USACE Section 404

- **February 2015**
  - Draft Environmental Impact Statement
    - **Comment Period Ends July 17, 2015**
- **March 2015**
  - 404 Public Notice
- **February 2016**
  - Final Environmental Impact Statement
- **Spring 2017***
  - Issuance of COL

*Date consistent with previous COL dates

USACE Section 404 Permitting – FPL Submittals

- **June 2009 - Section 404 Application and Mitigation Plan**
- **May 2010 - Revised 404 Application (removal of FPL-owned fill source)**
- **July 2011 – Mitigation Plan Rev 2**
- **October 2011 - Section 404(b)(1) Alternatives Analysis**
- **August 2012 - Mitigation Plan Rev 2 (USACE Supplement)**
- **November 2012 - Biological Assessment**
- **December 2013 – Revised 404 Application (removal of West Secondary Corridor, inclusion of West Consensus Corridor as primary; removal of original RWTF location, inclusion of RWTF alternate location)**
- **Responses to Requests for Additional Information:**
  - December 2011 (Analysis of alternatives to West Preferred transmission corridor)
  - April 2012 (Additional Information regarding FPL's Section 404(b)(1) Alternatives Analysis)
  - June 2013 (Additional information based on 12/12/12 NRC public meeting. Focus on LEDPA analysis)
  - September 2013 (West transmission corridor alternatives)
  - March 2014 (LEDPA analysis: practicability factors and site selection process)

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APPENDIX

FPL.

EPA Letters (4/9/15 & 5/4/15) to USACE: FPL Preliminary Comments/Reponses (5/8/15)

Page 1, Paragraph 1, 2nd sentence: "*The applicant proposes to impact **1,000 acres of tidal and freshwater wetlands** for the purpose of constructing two new 1,100 megawatt nuclear generating units at the existing Turkey Point facility.*"	Statement is incorrect, consistent with incorrect statements in the PN and DEIS. • USACE permit application requests authorization for 710 acres of direct impact and 50 acres of temporary impact. • Wetlands proposed for impact are not tidal. • Full and accurate summary of proposed wetland impacts is located in USACE permit application, modified per letter FPLNNP-10-0151 (May 7, 2010), and the associated August 2012 Mitigation Plan Rev 2 (USACE Supplement).
Page 1, Paragraph 1, 5th sentence: "*However, the PN **did not provide a detailed breakdown of wetland impacts by community type**.*"	This detailed breakdown is provided in the USACE application, Mitigation Plan, Environmental Report (ER), and Site Certification Application (SCA)
Page 1, **Paragraph 3, 1st sentence: "*The proposed project will have a direct impact on approximately 300 acres of high quality, tidal mangrove wetlands.*"**	Statement is incorrect. The 300 acre number used appears to derive from the PN "Existing Conditions" description of the Units 6&7 Site ("*The approximately 300-acre site consists of the 218-acre plant area for Units 6 & 7, and adjacent areas designated for laydown.*"), but this is the figure for the entire site, and these 300 acres are not high quality tidal mangrove wetlands. • **No tidal wetlands are proposed to be permanently impacted.** • Approximately 250 ac of wetland impacts are proposed, associated with the Units 6&7 Site and adjacent laydown area • The Site is dominated by sparsely-vegetated hypersaline mud flats, bisected by two remnant canals and their associated spoil pile berms, with small scattered areas of mangroves. The Site is isolated from Biscayne Bay, and wholly contained within an industrial wastewater treatment facility that has been in place since the early 1970s. Data presented in the USACE application, Mitigation Plan, ER, and SCA include the following excerpts regarding impacts to and characteristics of mangrove wetlands within the project area: • Units 6&7 Site contains approx. 29.1 ac of low-quality non-tidal mangroves within the existing Industrial Wastewater Treatment Facility (IWWTF) • The Site is periodically inundated by hypersaline water used for cooling purposes and provides limited habitat for aquatic biota, evidenced by the limited number of aquatic taxa that can tolerate hypersaline waters, elevated temperatures, and low dissolved oxygen. • Nuclear Admin/parking/training area = approx. 26.1 ac of non-tidal mangrove and willow surrounded by existing Turkey Point plant parking lots and roadways • Reclaimed Water Treatment Facility (RWTF) = approx. 32.6 ac of non-tidal mangrove/sawgrass located upon and adjacent to previously dredged test cooling canals, surrounded by existing roadways and L-31E levee The rationale provided by EPA for considering tidal mangroves as ARNI does not apply to the isolated, non-tidal wetlands described above.

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EPA Letters (4/9/15 & 5/4/15) to USACE: FPL Preliminary Comments/Reponses (5/8/15)

Page 2, Paragraph 1, 1st sentence: *"In addition, the proposed project would impact* ***approximately 40 acres of sawgrass marshes*** *which provide principal environmental values related to water quality and quantity."*	The source of the 40 ac value is unclear. It appears that it might refer to the non-tidal areas within the RWTF impact area, if so, the 40 ac of sawgrass marsh value is not correct. • Approx 32.6 ac of mangrove/sawgrass is proposed for impact within RWTF. • The RWTF is within an isolated wetland area historically impacted by construction of test cooling canals and does not connect to Biscayne Bay. • None of the wildlife species mentioned in the rationale for considering sawgrass marsh as ARNI have been observed or are expected to occur within the RWTF area, with the potential exception of wood stork. The RWTF is not located within the core foraging area of any wood stork colonies. • West transmission corridor includes areas of sawgrass within the existing transmission line ROW. Final transmission facilities design (roads and structure pads) will avoid and minimize wetland impacts to the greatest extent practicable.
Page 2, Paragraph 2, 1st sentence: *"Lastly, the proposed project would impact approximately* ***one acre of submerged aquatic vegetation (SAV), which includes Ruppia maritima, Thalassia testudinum, and Halodule wrightii."***	Value is incorrect. The correct value is presented in the PN. • Seagrass surveys within the equipment barge unloading area resulted in approx. 0.004 ac of two species of seagrass, *Thalassia* and *Halodule*, no occurrence of *Ruppia*. • Seagrasses within the IWWTF (*Halodule* and *Ruppia*) do not provide the ARNI functions described in the remainder of paragraph 2 as they are not connected to Biscayne Bay
Page 2, Paragraph 3, 1st sentence: "*The EPA requests that the applicant* ***provide information on measures that have been taken to avoid and minimize onsite, freshwater and tidal wetland impacts.*** *The project as proposed* ***will impact 1000 acres of tidal and freshwater wetlands*** *which include ARNI."*	A discussion of avoidance and minimization measures was provided in Section 9 of the October 2011 Section 404(b)(1) Alternatives Analysis, as well as the Introduction sections of the June 2009 Mitigation Plan (SCA Appendix 10.4, Attachment E), July 2011 Mitigation Plan (Rev 2), and August 2012 Mitigation Plan Rev. 2 (USACE Supplement). As noted above, the USACE permit application does not request authorization for 1000 acres of wetland impact, and no permanent impacts to tidal wetlands are proposed.

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EPA Letters (4/9/15 & 5/4/15) to USACE: FPL Preliminary Comments/Reponses (5/8/15)

Page 2, Paragraph 3, 5th sentence: "*The EPA recommends that the applicant consider installing the reclaimed and potable waterlines at deep enough elevations which would* ***allow herbaceous wetlands to remain at the surface.***"	The restoration of temporary wetland impacts associated with pipelines is standard practice; FPL's commitment in this regard is already described in detail in the USACE application, ER, SCA, and Conditions of Certification (COCs). Following installation of pipelines, wetlands will be restored to their pre-impact condition and thereafter be allowed to remain within the right-of-way (ROW). In addition, FPL has committed to providing additional mitigation credits to offset the lag time associated with in-situ restoration of temporarily impacted wetlands within pipeline ROWs.
Page 2, Paragraph 3, last sentence: "*In addition, we recommend that* ***all lay down areas used during construction be restored to their natural wetland community type.***"	Portions of the Site for staging and laydown currently consist of approximately 20 acres of previously filled areas/roadways and approximately 32 acres of the IWWTF, consisting of low quality areas of open water/discharge canal, adjacent dwarf mangroves, and a man-made remnant canal. None of the areas are a natural wetland community type, and restoration to their existing condition would provide minimal ecological benefit. The restoration of natural mangrove wetlands off-site at the Everglades Mitigation Bank provides much greater regional ecological benefit than the restoration of canals, open water areas, and sparse dwarf mangroves within an active IWWTF.
Page 2, Paragraph 4, 1st sentence: "*In order to evaluate the proposed project, the EPA requests that the applicant* ***provide a colored copy benthic survey of the boat basin, radial collector well locations, and the Unit 6&7 site.***"	• Benthic survey of the equipment barge unloading area was provided (see #5); COCs [Section B.VII (Miami Dade County) O.7] require survey to be updated prior to construction. • Radial collector well caissons are upon uplands, no benthic communities are present. • Benthic surveys of the area above the radial collector wells (RCW) radials were provided in SCA Completeness Round 1 (October 2009). • COCs include extensive RCW biological monitoring plan for benthic resources prior to, during, and following RCW construction and operation. • Units 6&7 site is dominated by mudflat that does not support SAV. Remnant canals within the site contain seagrass, but these areas are isolated from Biscayne Bay and do not provide the SAV functions associated with ARNI (see #5).

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EPA Letters (4/9/15 & 5/4/15) to USACE: FPL Preliminary Comments/Reponses (5/8/15)

Page 3, Paragraph 1 (starts at bottom of pg 2), last sentence: "*Please provide information which would support construction of the project considering the fact that even though the power units will be constructed on this island,* ***the surrounding landscape may be impacted by sea level rise or storm surges that may affect the feasibility of the project given the project purpose.***"	FPL has provided substantial scientific data and testimony about sea level and the effects of sea level rise during the state site certification proceedings. The Recommended Order for Certification issued by the State of Florida for the project states: "*The plant design elevation accounts for more than maximum storm surge plus sea level rise. FPL has provided reasonable assurance that the Project is not contrary to the public interest as it relates to sea level rise.*"
Page 3, Paragraph 2, last 2 sentences: "*It is not clear what contingency plan will be implemented should the 60 day* (RCW) *limitation be exhausted and the reclaimed water supply is not available.* ***Please provide a detailed explanation of the contingency plans.***"	Conditions of Certification Section B.VI.C.3.b addresses the contingency plan for emergency water allocation: "*Emergency Withdrawals Any withdrawals in excess of the withdrawals authorized under this Certification shall require prior SFWMD approval. The SFWMD may grant such approval for any emergency withdrawals less than 90 days in duration without modifying these Conditions of Certification. SFWMD approval shall be based on the non-procedural requirements of Chapter 40E-2, F.A.C.*"
Page 3, Paragraph 3, last 2 sentences: "*In the event that onsite wetland impacts are reduced and avoidance and minimization are demonstrated in the future, the EPA requests that the applicant* ***provide the following information regarding any proposed mitigation. This information is necessary in order to ensure the proposed mitigation for impacts associated with the project are in compliance with the Federal Compensatory Mitigation rule, dated April 2008.***"	A discussion of the proposed mitigation plan's compliance with Federal Compensatory Mitigation Rule was provided in the Section 5 of the August 2012 Mitigation Plan Rev. 2 (USACE Supplement).

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EPA Letters (4/9/15 & 5/4/15) to USACE: FPL Preliminary Comments/Reponses (5/8/15)

Page 4, Paragraph 1, first sentence: "*The EPA requests that the applicant* ***provide Uniform Mitigation Assessment Method scores for the proposed impact and mitigation sites***."	UMAM scores are provided for all impact and mitigation sites in the USACE application, associated July 2011 Mitigation Plan (Rev 2) and the August 2012 Mitigation Plan Rev. 2 (USACE Supplement), including the technical rationale for each score. The UMAM scores have been thoroughly reviewed by the FDEP and MDC, and approved in the Conditions of Certification.
Page 4, Paragraph 2, first sentence: "The EPA requests that the applicant **provide a cumulative impact analysis for other commercial projects that have proposed tidal and freshwater wetland impacts in Miami-Dade County**, Florida."	Cumulative ecological impacts have been thoroughly addressed in Section 7.3 of the DEIS

FPL.

EPA Letters (4/9/15 & 5/4/15) to USACE: FPL Preliminary Comments/Reponses (5/8/15)

Page 2, Paragraph 4, 2nd sentence: "*At this point, the state has not issued its Section 401 certification for this project.*"	Statement is incorrect. The Project was certified by the State of Florida on May 19, 2014. A written final order granting certification under the Florida Electric Power Plant Siting Act constitutes the granting of Section 401 water quality certification by the Florida Department of Environmental Protection. See ss. 403.511(3), 403.531(3), Fla. Stat.
Page 2, Paragraph 4, last sentence: "*To the best of our knowledge, neither the ESA consultation nor the Section 401 certification processes have been completed as of the date of this letter.*" Page 2, Paragraph 5, 4th sentence: "*In addition, the state has not issued its Section 401 certification and consultation with the FWS has not been completed.*"	ESA Section 7 consultation with the USFWS and NMFS has been initiated by the NRC and is ongoing; FPL expects Biological Opinion issuance concurrent with Final Environmental Impact Statement. See item #1 above for Section 401 certification.
Page 2, Paragraph 5, 3rd sentence: "*Therefore, because the EPA has not been provided sufficient additional information to allow us to determine that the proposed project complies with the CWA Section 404(b)(1) guidelines, we must conclude that it does not, and we therefore believe that a permit for the project is not approvable, as proposed.*"	As described in the cover letter to this submittal, FPL has not been provided an opportunity to provide additional information to the EPA. We would appreciate the opportunity to provide the material referenced and participate directly in meetings to resolve EPA's concerns.

FPL.